

(iii) Allotments generated under paragraph (i) of this section which are converted to credits; plus

(iv) Credits purchased under paragraph (e) of this section; minus

(v) Credits sold under paragraph (e) of this section; minus

(vi) Credits used under paragraphs (f) and (g) of this section; minus

(vii) Credits expiring under paragraph (h) of this section; minus

(viii) Credit deficit from the previous year.

(3) Agree the credits remaining or the credit deficit at the conclusion of the year being reviewed with the report to EPA.

(4) If the refinery or importer had a credit deficit for both the previous year and the year being reviewed, report this fact as a finding.

(k) *Sulfur allotments in 2004 and 2005.* The following requirements apply to any refinery or importer that is subject to corporate pool average standards under § 80.195:

(1) *Corporate pool average.* (i) Obtain the annual average sulfur level for the refiner or importer from the sulfur report filed with EPA for all gasoline subject to corporate pool standards (all gasoline produced and imported, except that if 50% or greater of the gasoline volume was GPA gasoline the refiner or importer is not subject to the corporate pool average).

(ii) Compute and report as a finding the company's gasoline volume subject to corporate pool standards and average sulfur level for gasoline subject to corporate pool standards, and agree with the values reported to EPA.

(2) *Allotment generation.* (i) For 2004, if the corporate pool average is less than 120 ppm, compute and report as a finding the number and type of sulfur allotments generated in accordance with the applicable provisions under § 80.275(b).

(ii) For 2005, if the corporate pool average is less than 90 ppm, compute and report as a finding the number and type of sulfur allotments generated in accordance with the applicable provisions under § 80.275(b).

(iii) If the refiner or importer produced and imported 50% or more of its gasoline for GPA use in 2004 or 2005, no allotments can be generated in that year.

(3) *Allotment purchases and sales.* (i) Obtain contracts or other documents for all allotments transferred to another company during the year being reviewed; compute and report as a finding the number of allotments represented in these documents as being transferred away; and agree with the report to EPA.

(ii) Obtain contracts or other documents for all allotments received during the year being reviewed; compute and report as a finding the number of allotments represented in these documents as being received; and agree with the report to EPA.

(4) *Allotments required.* (i) For 2004, if the corporate pool average is greater than 120 ppm, compute and report as a finding the number of allotments required by multiplying the amount the corporate pool average is above 120 ppm times the corporate pool volume, and agree with the report to EPA.

(ii) For 2005, if the corporate pool average is greater than 90 ppm, compute and report as a finding the number of allotments required by multiplying the amount the corporate pool average is above 90 ppm times the corporate pool volume, and agree with the report to EPA.

(iii) Obtain the number of allotments used to meet standards for GPA gasoline determined in paragraph (g) of this section.

(5) *Allotment reconciliation.* (i) Compute and report as a finding the net allotments remaining at the conclusion of the year being reviewed by totaling allotments:

(A) Generated under paragraphs (i)(4) and (k)(2) of this section; plus

(B) Purchased under paragraph (k)(3) of this section; minus

(C) Sold under paragraph (k)(3) of this section; minus

(D) Used under paragraph (k)(4) of this section for demonstrating compliance with the corporate pool average.

(ii) Report as a finding any allotments generated in 2003 or 2004 that are used to meet the corporate pool standards in 2005 that were not reduced to 50% of their original value.

(iii) If the company's net allotments remaining are less than zero, report this fact as a finding.

PART 85—CONTROL OF AIR POLLUTION FROM MOBILE SOURCES

5. The authority citation for part 85 continues to read as follows:

Authority: 42 U.S.C. 7521, 7522, 7524, 7525, 7541, 7542, 7601(a).

6. Section 85.1515 is amended by:

- a. redesignating the existing paragraph (c) as paragraph (c)(1),
- b. adding new paragraphs (c)(2), (c)(3), (c)(5), (c)(6) and (c)(7), and adding and reserving paragraph (c)(4), and
- c. revising paragraph (d).

The revisions and additions read as follows:

§ 85.1515 Emission standards and test procedures applicable to imported nonconforming motor vehicles and motor vehicle engines.

* * * * *

(c)(1) * * *

(2)(i) The provisions of paragraph (c)(1) of this section notwithstanding, nonconforming light-duty vehicles and light light-duty trucks (LDV/LLDTs) modified in model years 2004, 2005 or 2006 must meet the FTP exhaust emission standards of bin 9 in Tables S04-1 and S04-2 in 40 CFR 86.1811-04 and the evaporative emission standards for light-duty vehicles and light light-duty trucks specified in 40 CFR 86.1811-04(e)(5).

(ii) Nonconforming LDT3s and LDT4s (HLDTs) and medium-duty passenger vehicles (MDPVs) modified in model years 2004 through 2006 must meet the FTP exhaust emission standards of bin 10 in Tables S04-1 and S04-2 in 40 CFR 86.1811-04 and the applicable evaporative standards specified in 40 CFR 86.1811-04(e)(5). For 2004 model year HLDTs and MDPVs where modifications commence on the first vehicle of a test group before December 21, 2003, this requirement does not apply to the 2004 model year. ICIs opting to bring all of their 2004 model year HLDTs and MDPVs into compliance with the exhaust emission standards of bin 10 in Tables S04-1 and S04-2 in 40 CFR 86.1811-04, may use the optional higher NMOG values for their 2004-2006 model year LDT2s and 2004-2008 LDT4s.

(iii) Nonconforming LDT3s and LDT4s (HLDTs) and medium-duty passenger vehicles (MDPVs) modified in model years 2007 and 2008 must meet the FTP exhaust emission standards of bin 8 in Tables S04-1 and S04-2 in 40 CFR 86.1811-04 and the applicable evaporative standards specified in 40 CFR 86.1811-04(e)(5).

(iv) Nonconforming LDV/LLDTs modified in model years 2007 and later and nonconforming HLDTs and MDPVs modified in model years 2009 and later must meet the FTP exhaust emission standards of bin 5 in Tables S04-1 and S04-2 of 40 CFR 86.1811-04, and the evaporative standards specified in 40 CFR 86.1811(e)(1) through (e)(4).

(v) ICIs are exempt from the Tier 2 and the interim non-Tier 2 phase-in intermediate percentage requirements for exhaust, evaporative and refueling emissions described in 40 CFR 86.1811-04.

(3)(i) As an option to the requirements of paragraph (c)(2) of this section, independent commercial importers may elect to meet lower bins in Tables S04-1 and S04-2 of 40 CFR 86.1811-04 than

specified in paragraph (c)(2) of this section and bank or sell credits as permitted in 40 CFR 86.1860-04 and 40 CFR 86.1861-04. An ICI may not meet higher bins in Tables S04-1 and S04-2 of 40 CFR 86.1811-04 than specified in paragraph (c)(2) of this section unless it demonstrates to the Administrator at the time of certification that it has obtained appropriate and sufficient NO_x credits from another manufacturer, or has generated them in a previous model year or in the current model year and not transferred them to another manufacturer or used them to address other vehicles as permitted in 40 CFR 86.1860-04 and 40 CFR 86.1861-04.

(ii) Where an ICI desires to obtain a certificate of conformity using a bin higher than specified in paragraph (c)(2) of this section, but does not have sufficient credits to cover vehicles produced under such certificate, the Administrator may issue such certificate if the ICI has also obtained a certificate of conformity for vehicles certified using a bin lower than that required under paragraph (c)(2) of this section. The ICI may then produce vehicles to the higher bin only to the extent that it

has generated sufficient credits from vehicles certified to the lower bin during the same model year.

(4) [Reserved]

(5) Except for the situation where an ICI desires to bank, sell or use NO_x credits as described in paragraph (c)(3) of this section, the requirements of 40 CFR 86.1811-04 related to fleet average NO_x standards and requirements to comply with such standards do not apply to vehicles modified under this subpart.

(6) ICIs using bins higher than those specified in paragraph (c)(2) of this section must monitor their production so that they do not produce more vehicles certified to the standards of such bins than their available credits can cover. ICIs must not have a credit deficit at the end of a model year and are not permitted to use the deficit carryforward provisions provided in 40 CFR 86.1860-04(e).

(7) The Administrator may condition the certificates of conformity issued to ICIs as necessary to ensure that vehicles subject to paragraph (c) of this section comply with the appropriate average NO_x standard for each model year.

(d) Except as provided in paragraph (c) of this section, ICI's must not participate in emission-related programs for emissions averaging, banking and trading, or nonconformance penalties.

* * * * *

PART 86—CONTROL OF EMISSIONS FROM NEW AND IN-USE HIGHWAY VEHICLES AND ENGINES

7. The authority citation for part 86 continues to read as follows:

Authority: 42 U.S.C. 7401-7671q.

8. In § 86.1 the table in paragraph (b)(4) is amended by revising the entry for "California Regulatory Requirements Applicable to the 'LEV II' Program" in alphabetical order and by revising the entry for "California Regulatory Requirements Applicable to the National Low Emission Vehicle Program, October 1996", to read as follows:

§ 86.1 Reference materials.

* * * * *

(b) * * *

(4) * * *

Document No. and name	40 CFR part 86 reference
California Regulatory Requirements Applicable to the "LEV II" Program, including:	
1. California Exhaust Emission Standards and Test Procedures for 2003 and Subsequent Model Zero-Emission Vehicles and 2001 and Subsequent Model Hybrid Electric Vehicles, in the Passenger Car, Light-duty Truck and Medium-duty Vehicle Classes. August 5, 1999.	86.1806-01; 86.1811-04; 86.1844-01.
2. California Non-Methane Organic Gas Test Procedures. August 5, 1999.	86.1803-01; 86.1810-01; 86.1811-04.
California Regulatory Requirements Applicable to the National Low Emission Vehicle Program, October 1996.	86.113-004; 86.612-97; 86.1012-97; 86.1702-99; 86.1708-99; 86.1709-99; 86.1717-99; 86.1735-99; 86.1771-99; 86.1775-99; 86.1776-99; 86.1777-99; Appendix XVI; Appendix XVII.

* * * * *

Subpart A—General Provisions for Emission Regulations for 1977 and Later Model Year New Light-Duty Vehicles, Light-Duty Trucks and Heavy-Duty Engines, and for 1985 and Later Model Year New Gasoline-Fueled, Natural Gas-Fueled, Liquefied Petroleum Gas-Fueled and Methanol-Fueled Heavy-Duty Vehicles

9. Section 86.004-11 is amended by adding paragraph (e) to read as follows:

§ 86.004-11 Emission standards for 2004 and later model year diesel heavy-duty engines and vehicles.

* * * * *

(e) The standards described in this section do not apply to diesel-fueled medium-duty passenger vehicles (MDPVs) that are subject to regulation

under subpart S of this part, except as specified in subpart S of this part. The standards described in this section also do not apply to diesel engines used in such MDPVs, except as specified in the regulations in subpart S of this part. The term "medium-duty passenger vehicle" is defined in § 86.1803.

10. Section 86.099-10 is amended by adding paragraph (e) to read as follows:

§ 86.099-10 Emission standards for 1999 and later model year Otto-cycle heavy-duty engines and vehicles.

* * * * *

(e) The standards described in this section do not apply to Otto-cycle medium-duty passenger vehicles (MDPVs) that are subject to regulation under subpart S of this part, except as specified in subpart S of this part. The standards described in this section also do not apply to Otto-cycle engines used

in such MDPVs, except as specified in subpart S of this part. The term "medium-duty passenger vehicle" is defined in § 86.1803.

10a. The heading of Subpart B is revised to read as follows:

Subpart B—Emission Regulations for 1977 and Later Model Year New Light-duty Vehicles, New Light-duty Trucks and New Medium-Duty Passenger Vehicles; Test Procedures

11. Section 86.113-04 is added to read as follows:

§ 86.113-04 Fuel specifications.

This section includes text that specifies requirements that differ from § 86.113-94. Where a paragraph in § 86.113-94 is identical and applicable to this section, this will be indicated by specifying the corresponding paragraph

and the statement “[Reserved]. For guidance see § 86.113–94.”.

(a) *Gasoline fuel.* (1) Gasoline having the following specifications will be used by the Administrator in exhaust and evaporative emission testing of

petroleum-fueled Otto-cycle vehicles, except that the Administrator will not use gasoline having a sulfur specification higher than 0.0045 weight percent. Gasoline having the following specification or substantially equivalent

specifications approved by the Administrator, must be used by the manufacturer in exhaust and evaporative testing except that octane specifications do not apply:

Item	ASTM test method No.	Value
Octane, Research, Min.	D 2699	93
Sensitivity, Min. ....	.....	7.5
Lead (organic), max. g/U.S. gal. (g/liter)	D 3237	0.050 (0.013)
Distillation Range:	D 86	
IBP ¹ :deg. F (deg. C) .....	.....	75–95 (23.9–35)
10 pct. point: deg.F (deg.C) .....	.....	120–135 (48.9–57.2)
50 pct. point: deg.F. (deg.C) .....	.....	200–230 (93.3–110)
90 pct. point: deg.F (deg.C) .....	.....	300–325 (148.9–162.8)
EP, max: deg.F (deg.C) .....	.....	415 (212.8)
Sulfur, weight pct.	D 1266	0.0015–0.008
Phosphorous, max. g/U.S. gal (g/liter)	D 3231	0.005 (0.0013)
RVP ^{2,3}	D 3231	8.7–9.2 (60.0–63.4)
Hydrocarbon composition:	D 1319	
Olefins, max. pct. ....	.....	10
Aromatics, max, pct. ....	.....	35
Saturates .....	.....	Remainder

¹ For testing at altitudes above 1,219 m (4000 feet), the specified range is 75–105 deg. F (23.9–40.6 deg. C).

² For testing which is unrelated to evaporative emission control, the specified range is 8.0-9.2 psi (55.2–63.4 kPa).

³ For testing at altitudes above 1,219 m (4000 feet), the specified range is 7.6–8.0 psi (52-55 kPa).

(2) For light-duty vehicles, light-duty trucks and medium-duty passenger vehicles certified for 50 state sale, and for Tier 2 and interim non-Tier 2 vehicles whose certification is carried over from the NLEV program or carried across from the California LEV I program, “California Phase 2” gasoline having the specifications listed in the table in this section may be used in exhaust emission testing as an option to the specifications in paragraph (a)(1) of this section. If a manufacturer elects to utilize this option, the manufacturer

must conduct exhaust emission testing with gasoline having the specifications listed in the table in this paragraph (a)(2) and in the case of interim non-Tier 2 LDV/Ts and interim non-Tier 2 MDPVs whose certification is carried over from the NLEV program or carried across from California LEV I program certification the Administrator must also conduct exhaust emission testing with gasoline having the specifications listed in the table in this paragraph (a)(2) . However, the Administrator may use or require the use of test fuel

meeting the specifications in paragraph (a)(1) of this section for certification confirmatory testing, selective enforcement auditing and in-use testing for all other vehicles. All fuel property test methods for this fuel are contained in Chapter 4 of the California Regulatory Requirements Applicable to the National Low Emission Vehicle Program (October, 1996). These requirements are incorporated by reference (see § 86.1). The table follows:

Fuel property	Limit
Octane, (R+M)/2 (min)	91
Sensitivity (min)	7.5
Lead, g/gal (max) (No lead added)	0–0.01
Distillation range, °F.	
10 pct. point,	130–150
50 pct. point,	200–210
90 pct. point,	290–300
EP, maximum	390
Residue, vol% (max)	2.0
Sulfur, ppm by wt.	15–40, except that administrator may use and approve for use, lower ranges where such ranges are consistent with current California requirements.
Phosphorous, g/gal (max)	0.005
RVP, psi	6.7–7.0
Olefins, vol%	4.0–6.0
Total aromatic hydrocarbons (vol%)	22–25
Benzene, vol%	0.8–1.0
Multi-substituted alkyl Aromatic hydrocarbons, vol%	12–14
MTBE, vol %	10.8–11.2
Additives:	See chapter 4 of the California Regulatory Requirements Applicable to the National Low Emission Vehicle Program (October, 1996). These procedures are incorporated by reference (see § 86.1).

Fuel property	Limit
Copper corrosion	No. 1.
Gum, washed, mg/100 ml (max)	3.0
Oxidation stability, minutes (min)	1000
Specific gravity	No limit; report to purchaser required.
Heat of combustion	No limit; report to purchaser required.
Carbon, wt%	No limit; report to purchaser required.
Hydrogen, wt%	No limit; report to purchaser required.

(3)(i) Unless otherwise approved by the Administrator, unleaded gasoline representative of commercial gasoline that will be generally available through retail outlets must be used in service accumulation. For model years 2004 and later, and unless otherwise approved by the Administrator, this gasoline must have a minimum sulfur content of 15 ppm. Unless otherwise approved by the Administrator, where the vehicle is to be used for evaporative emission durability demonstration, such fuel must contain ethanol as required by § 86.1824-01(a)(2)(iii). Leaded gasoline must not be used in service accumulation.

(ii) Unless otherwise approved by the Administrator, the octane rating of the gasoline used must be no higher than 1.0 Retail octane number above the lowest octane rating that meets the fuel grade the manufacturer will recommend to the ultimate purchaser for the relevant production vehicles. If the manufacturer recommends a Retail octane number rather than a fuel grade, then the octane rating of the service accumulation gasoline can be no higher than 1.0 Retail octane number above the recommended Retail octane number. The service accumulation gasoline must also have a minimum sensitivity of 7.5 octane numbers, where sensitivity is defined as the Research octane number minus the Motor octane number.

(iii) The Reid Vapor Pressure of the gasoline used must be characteristic of the motor fuel used during the season in which the service accumulation takes place.

(4) The specification range of the gasoline to be used under this paragraph (a) must be reported in accordance with §§ 86.094-21(b)(3) and 86.1844-01.

(b) through (g) [Reserved]. For guidance see § 86.113-94.

12. Section 86.129-00 is amended by adding a new paragraph (f)(1)(ii)(C) to read as follows:

§ 86.129-00 Road load power, test weight, and inertia weight class determination.

* * * * *

(f) * * *

(1) * * *

(ii) * * *

(C) Regardless of other requirements in this section relating to the testing of HLDTs, for Tier 2 HLDTs, the test weight basis for FTP and SFTP testing (both US06 and SC03), if applicable, is the vehicle curb weight plus 300 pounds. For MDPVs certified to standards in bin 11 in Tables S04-1 and 2 in § 86.1811-04, the test weight basis must be adjusted loaded vehicle weight (ALVW) as defined in this part.

* * * * *

12.a. The heading of Subpart C is revised to read as follows:

Subpart C—Emission Regulations for 1994 and Later Model Year Gasoline-Fueled New Light-Duty Vehicles, New Light-Duty Trucks and New Medium-Duty Passenger Vehicles; Cold Temperature Test Procedures

13. Section 86.213-04 is added to read as follows:

§ 86.213-04 Fuel specifications.

Gasoline having the following specifications will be used by the Administrator except that the Administrator will not use gasoline having a sulfur specification higher than 0.0045 weight percent. Gasoline having the specifications set forth in the table in this section, or substantially equivalent specifications approved by the Administrator, may be used by the manufacturer except that the octane specification does not apply. In lieu of using gasoline having these specifications, the manufacturer may, for certification testing, use gasoline having the specifications specified in § 86.113-04 provided the cold CO emissions are not decreased. Documentation showing that cold CO emissions are not decreased must be maintained by the manufacturer and must be made available to the Administrator upon request. The table listing the cold CO fuel specifications described in the text in this section follows:

TABLE—COLD CO FUEL SPECIFICATIONS

Item	ASTM test	Cold CO low octane value or range	Cold CO high octane ¹ value or range
(RON+MON)/2, min	D 2699	87.8±.3	92.3±0.5
Sensitivity, min	D 2699	7.5	7.5
Distillation range:..			
IBP, deg.F	D 86	76-96	76-96
10% point, deg.F.	D 86	98-118	105-125
50% point, deg.F.	D 86	179-214	195-225
90% point, deg.F.	D 86	316-346	316-346
EP, max, deg.F	D 86	413	413
Sulfur, wt. %	D 3120	0.0015-0.008	0.0015-0.008
Phosphorous, g/U.S gal, max	D 3231	0.005	0.005
Lead, g/gal, max		0.01	0.01
RVP, psi	D 4953	11.5±.3	11.5±.3
Hydrocarbon composition	D 1319		
Olefins, vol. pct		12.5±5.0	10.0±5.0
Aromatics, vol. pct		26.4±4.0	32.0±4.0
Saturates		Remainder	Remainder.

¹ Gasoline having these specifications may be used for vehicles which are designed for the use of high-octane premium fuel.

Subpart R—General Provisions for the Voluntary National Low Emission Vehicle Program for Light-Duty Vehicles and Light-Duty Trucks

14. Section 86.1701–99 is amended by adding paragraph (f) to read as follows:

§ 86.1701–99 General applicability.

* * * * *

(f) The provisions of this subpart are not applicable to 2004 or later model year vehicles, except where specific references to provisions of this subpart are made in conjunction with provisions applicable to such vehicles.

14.a. The title of subpart S is revised to read as follows:

Subpart S—General Compliance Provisions for Control of Air Pollution From New and In-use Light-Duty Vehicles, Light-Duty Trucks and Medium Duty Passenger Vehicles

15. Section 86.1801–01 is amended by:

- a. revising the first sentence of paragraph (a),
 - b. adding one sentence to the end of paragraph (c)(1),
 - c. revising the first sentence of paragraph (e), and
 - d. adding paragraphs (f), (g) and (h).
- These revisions and additions read as follows:

§ 86.1801–01 Applicability.

(a) Except as otherwise indicated, the provisions of this subpart apply to new 2001 and later model year Otto-cycle and diesel cycle light-duty vehicles, light-duty trucks and medium-duty passenger vehicles, including multi-fueled, alternative fueled, hybrid electric, and zero emission vehicles.

* * * * *

(c) * * * (1) * * * A 2004 or later model year heavy-duty vehicle optionally certified as a light-duty truck under this provision must comply with all provisions applicable to MDPVs including exhaust and evaporative emission standards, test procedures, on-board diagnostics, refueling standards, phase-in requirements and fleet average standards under 40 CFR Part 85 and this part.

* * * * *

(e) *National Low Emission Vehicle Program for light-duty vehicles and light light-duty trucks.* A manufacturer may elect to certify 2001–2003 model year light-duty vehicles and light light-duty trucks (LDV/LLDTs) to the provisions of the National Low Emission Vehicle

Program contained in Subpart R of this part. * * *

(f) *“Early” Tier 2 LDVs, LDTs and MDPVs.* Any LDV/LLDT which is certified to Tier 2 FTP exhaust standards prior to the 2004 model year, or any HLDT or MDPV which is certified to the Tier 2 FTP exhaust standards prior to the 2008 model year, to utilize alternate phase-in schedules and/or for purposes of generating and banking Tier 2 NO_x credits, must comply with all the exhaust emission requirements applicable to Tier 2 LDV/LLDTs or HLDT/MDPVs, as applicable, under this subpart.

(g) *Interim non-Tier 2 LDVs, LDTs and MDPVs.* Model year 2004–2008 LDVs, LDTs and MDPVs, that do not comply with the Tier 2 FTP exhaust emission requirements (interim non-Tier 2 LDV/LLDTs and interim non-Tier 2 HLDT/MDPVs) as permitted under the phase-in requirements of § 86.1811–04(k) must comply with all applicable interim non-Tier 2 exhaust emission requirements contained in this subpart, including FTP exhaust emission requirements for all interim non-Tier 2 LDV/LLDTs and HLDT/MDPVs found at § 86.1811–04(l). Additional emission bins and separate fleet average NO_x emission standards and other provisions are provided for interim non-Tier 2 LDV/LLDTs, and interim non-Tier 2 HLDT/MDPVs.

(h) *Applicability of provisions of this subpart to LDVs, LDTs and MDPVs.* Numerous sections in this subpart provide requirements or procedures applicable to a “vehicle” or “vehicles”. Unless otherwise specified or otherwise determined by the Administrator, the term “vehicle” or “vehicles” in those provisions apply equally to LDVs, LDTs and MDPVs.

16. Section 86.1803–01 is amended by adding the following definitions in alphabetical order to read as follows:

§ 86.1803–01 Definitions.

* * * * *

Bin or emission bin means a set of emission standards applicable to exhaust pollutants measured on the Federal Test Procedure (FTP). A bin is equivalent to a horizontal row of FTP standards in Tables S04–1 and S04–2 shown in this subpart. Manufacturers are generally free to choose the bin of standards that will apply to a certain test group of vehicles, provided that on a sales weighted average of those bins, all of their vehicles meet a specified fleet average standard for a particular pollutant.

* * * * *

CalLEV II or California LEV II refers to California’s second phase of its low emission vehicle (LEV) program. This program was adopted at the hearing of the California Air Resources Board held on November 5, 1998 and became effective on November 27, 1999.

* * * * *

Fleet average NO_x standard means, for light-duty vehicles, light-duty trucks and medium-duty passenger vehicles, a NO_x standard imposed over an individual manufacturer’s total U.S. sales (or a fraction of total U.S. sales during phase-in years), as “U.S. sales” is defined in this subpart, of a given model year. Manufacturers determine their compliance with such a standard by averaging, on a sales weighted basis, the individual NO_x standards they choose for the fleet of light-duty vehicles, light-duty trucks and medium-duty passenger vehicles they sell of that model year.

* * * * *

Interim non-Tier 2 vehicle, interim non-Tier 2 LDV/LLDT, interim non-Tier 2 HLDT/MDPV, or interim vehicle refer to 2004 or later model year light-duty vehicles, light-duty trucks or MDPVs, or a specific combination thereof, not certified to Tier 2 FTP exhaust emission standards during the Tier 2 phase-in period. Model year 2004 HLDTs belonging to test groups whose model year commences before December 21, 2003, are not interim non-Tier 2 HLDTs unless their manufacturer chooses to comply with the interim requirements applicable to HLDTs for all of its 2004 model year HLDTs as permitted in this subpart. Similarly 2004 model year heavy-duty vehicles whose model year commences before December 21, 2003, are not interim non-Tier 2 MDPVs unless their manufacturer chooses to comply with the interim requirements applicable to MDPVs for all of its 2004 model year MDPVs as permitted in this subpart. The terms *interim non-Tier 2 vehicle, interim non-Tier 2 LDV, interim non-Tier 2 LDT, interim non-Tier 2 HLDT, interim non-Tier 2 MDPV*, etc. have the same meaning without the words “non-Tier 2”.

* * * * *

LDV/T means light-duty vehicles and light-duty trucks collectively, without regard to category.

* * * * *

Medium-duty passenger vehicle (MDPV) means any heavy-duty vehicle

(as defined in this subpart) with a gross vehicle weight rating (GVWR) of less than 10,000 pounds that is designed primarily for the transportation of persons. The MDPV definition does not include any vehicle which:

- (1) Is an "incomplete truck" as defined in this subpart; or
- (2) Has a seating capacity of more than 12 persons; or
- (3) Is designed for more than 9 persons in seating rearward of the driver's seat; or
- (4) Is equipped with an open cargo area (for example, a pick-up truck box or bed) of 72.0 inches in interior length or more. A covered box not readily accessible from the passenger compartment will be considered an open cargo area for purposes of this definition.

* * * * *

Non-methane organic gases (NMOG) means the sum of oxygenated and non-oxygenated hydrocarbons contained in a gas sample as measured in accordance with the California Non-Methane Organic Gas Test Procedures. These requirements are incorporated by reference (see § 86.1)

* * * * *

Periodically regenerating trap oxidizer system means a trap oxidizer that utilizes, during normal driving conditions, an automated regeneration mode for cleaning the trap, the operation of which can be easily detected.

* * * * *

Point of first sale means the location where the completed vehicle is first purchased. This term is synonymous with final product purchase location. The point of first sale may be a retail customer, dealer, distributor, fleet operator, broker, secondary manufacturer, or any other entity which purchases a vehicle from a manufacturer. In cases where the end user purchases the completed vehicle directly from the manufacturer, the end user is the point of first sale.

* * * * *

Round, rounded or rounding means, unless otherwise specified, that numbers will be rounded according to ASTM-E29-93a, which is incorporated by reference in this part pursuant to § 86.1.

* * * * *

Tier 2 HLDT/MDPV means any heavy light-duty truck or medium-duty passenger vehicle, including HEVs and ZEVs, of the 2008 or later model year certified to comply with the Tier 2 FTP exhaust standards contained in § 86.1811-04 including the 0.07 g/mi fleet average NO_x standard. The term

Tier 2 HLDT/MDPV also includes any heavy light-duty truck or medium-duty passenger vehicle, of any model year, which is certified to Tier 2 FTP exhaust standards for purposes of generating or banking early NO_x credits for averaging under Tier 2 requirements, or utilizing alternate phase-in schedules, as allowed in this subpart.

Tier 2 LDV/LLDT means any light-duty vehicle or light light-duty truck, including HEVs and ZEVs, of the 2004 or later model year certified to comply with the Tier 2 FTP exhaust standards contained in § 86.1811-04 including the 0.07 g/mi fleet average NO_x standard. The term Tier 2 LDV/LLDT also includes any light-duty vehicle or light light-duty truck, of any model year, which is certified to Tier 2 FTP exhaust standards for purposes of generating or banking early NO_x credits for averaging under Tier 2 requirements, or utilizing alternate phase-in schedules as allowed in this subpart.

Tier 2 standards means those FTP exhaust emission standards including the 0.07 g/mi full useful life fleet average NO_x standard, applicable to new light-duty vehicles and light light-duty trucks that begin a phase-in in the 2004 model year, and those exhaust emission standards including the 0.07 g/mi full useful life fleet average NO_x standard, applicable to heavy light-duty trucks and medium-duty passenger vehicles that begin a phase-in in the 2008 model year. These standards are found in § 86.1811-04 of this subpart.

Tier 2 vehicle means any vehicle certified to comply with the Tier 2 FTP exhaust standards contained in § 86.1811-04 including the 0.07 g/mi fleet average NO_x standard.

* * * * *

U.S. sales means, unless otherwise specified, sales in any state of the United States except for California or a state that has adopted California motor vehicle standards for that model year pursuant to section 177 of the Clean Air Act. This definition applies only to those regulatory requirements addressing Tier 2 and interim non-Tier 2 vehicles.

* * * * *

17. Section 86.1804-01 is amended by adding the following acronyms and abbreviations, in alphabetical order, to read as follows:

§ 86.1804-01 Acronyms and abbreviations.

* * * * *

- HCHO—Formaldehyde.
- HEV—Hybrid electric vehicle.

* * * * *

HLDT—Heavy light-duty truck. Includes only those trucks over 6000 pounds GVWR (LDT3s and LDT4s).

HLDT/MDPV—Heavy light-duty trucks and medium-duty passenger vehicles.

* * * * *

LDV/LLDT—Light-duty vehicles and light light-duty trucks. Includes only those trucks rated at 6000 pounds GVWR or less (LDT1s and LDT2s).

LDV/T—Light-duty vehicles and light-duty trucks. This term is used collectively to include, or to show that a provision applies to, all light-duty vehicles and all categories of light-duty trucks, i.e.

LDT1, LDT2, LDT3 and LDT4.

LEV—Low Emission Vehicle.

* * * * *

MDPV—Medium-duty passenger vehicle.

* * * * *

NLEV—Refers to the National Low Emission Vehicle Program. Regulations governing this program are found at subpart R of this part.

* * * * *

NMOG—Non-methane organic gases.

* * * * *

RAF—Reactivity adjustment factor.

* * * * *

SULEV—Super Ultra Low Emission Vehicle.

* * * * *

TLEV—Transitional Low Emission Vehicle.

* * * * *

ULEV—Ultra Low Emission Vehicle.

* * * * *

ZEV—Zero Emission Vehicle.

18. Section 86.1805-04 is added to read as follows:

§ 86.1805-04 Useful life.

(a) Except as required under paragraph (b) of this section or permitted under paragraphs (d), (e) and (f) of this section, the full useful life for all LDVs, LDT1s and LDT2s is a period of use of 10 years or 120,000 miles, whichever occurs first. For all HLDTs and MDPVs, full useful life is a period of 11 years or 120,000 miles, whichever occurs first. This full useful life applies to all exhaust, evaporative and refueling emission requirements except for standards which are specified to only be applicable at the time of certification.

(b) Manufacturers may elect to optionally certify a test group to the Tier 2 exhaust emission standards for 150,000 miles to gain additional NO_x credits, as permitted in § 86.1860-04(g), or to opt out of intermediate life standards as permitted in § 86.1811-04(c). In such cases, useful life is a period of use of 15 years or 150,000 miles, whichever occurs first, for all exhaust, evaporative and refueling emission requirements except for cold CO standards and standards which are applicable only at the time of certification.

(c) Where intermediate useful life exhaust emission standards are

applicable, such standards are applicable for five years or 50,000 miles, whichever occurs first.

(d) Where cold CO standards are applicable, the useful life requirement for compliance with the cold CO standard only, is 5 years or 50,000 miles, whichever occurs first.

(e) Where LDVs, LDT1s and LDT2s of the 2003 or earlier model year are certified to Tier 2 exhaust emission standards for purposes of generating early Tier 2 NO_x credits, manufacturers may certify those vehicles to full useful lives of 100,000 miles in lieu of the otherwise required 120,000 mile full useful lives, as provided under § 86.1861-04(c)(4).

(f) For interim non-Tier 2 LDV/LLDTs, the useful life requirement for exhaust, evaporative and refueling emissions is 10 years or 100,000 miles, whichever occurs first.

19. Section 86.1806-01 is amended by:

- a. revising paragraph (a);
- b. adding paragraph (b)(8);
- c. redesignating the text of paragraph (d) after the paragraph heading as (d)(1); and
- d. adding paragraph (d)(2).

The revisions and additions read as follows:

§ 86.1806-01 On-board diagnostics.

(a)(1) Except as provided by paragraph (a)(2) of this section, all light-duty vehicles, light-duty trucks and MDPVs must be equipped with an onboard diagnostic (OBD) system capable of monitoring, for each vehicle's useful life, all emission-related powertrain systems or components. All systems and components required to be monitored by these regulations must be evaluated periodically, but no less frequently than once per Urban Dynamometer Driving Schedule as defined in Appendix I, paragraph (a), of this part, or similar trip as approved by the Administrator.

(2) Diesel fueled chassis-certified MDPVs and engine-certified diesel engines used in MDPVs, are subject to the requirements of this section only if the exhaust emission certification of the applicable test group is being carried across from a California configuration to which California OBD-II requirements are applicable.

(b) * * *
(8) *For Tier 2 and interim non-Tier 2 hybrid electric vehicles (HEVs) only.*

Unless added to HEVs in compliance with other requirements of this section, or unless otherwise approved by the Administrator:

(i) The manufacturer must equip each HEV with a maintenance indicator

consisting of a light that must activate automatically by illuminating the first time the minimum performance level is observed for each battery system component. Possible battery system components requiring monitoring are: battery water level, temperature control, pressure control, and other parameters critical for determining battery condition.

(ii) The manufacturer must equip "off-vehicle charge capable HEVs" with a useful life indicator for the battery system consisting of a light that must illuminate the first time the battery system is unable to achieve an all-electric operating range (starting from a full state-of-charge) which is at least 75 percent of the range determined for the vehicle in the Urban Driving Schedule portion of the All-Electric Range Test (see the California Exhaust Emission Standards and Test Procedures for 2003 and Subsequent Model Zero-Emission Vehicles, and 2001 and Subsequent Model Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck and Medium-Duty Vehicle Classes. These requirements are incorporated by reference (see § 86.1).

(iii) The manufacturer must equip each HEV with a separate odometer or other device subject to the approval of the Administrator that can accurately measure the mileage accumulation on the engines used in these vehicles.

* * * * *

(d) *MIL illumination.* (1) * * *
(2)(i) For interim non-Tier 2 and Tier 2 LDV/LLDTs and HLDT/MDPVs, vehicles produced through the 2007 model year, upon a manufacturer's written request, EPA will consider allowing the use of an on-board diagnostic system during the certification process, that functions properly on low-sulfur gasoline, but indicates sulfur-induced passes when exposed to high sulfur gasoline.

(ii) For interim non-Tier 2 and Tier 2 LDV/LLDTs and HLDT/MDPVs, if vehicles produced through the 2007 model year exhibit illuminations of the emission control diagnostic system malfunction indicator light due to high sulfur gasoline, EPA will consider, upon a manufacturer's written request, allowing modifications to such vehicles on a case-by-case basis so as to eliminate the sulfur induced illumination.

* * * * *

20. Section 86.1807-01 is amended by revising paragraph (a)(3)(vi) to read as follows:

§ 86.1807-01 Vehicle labeling.

(a) * * *

(3) * * *

(vi) The exhaust emission standards to which the test group is certified, and for test groups having different in-use standards, the corresponding exhaust emission standards that the test group must meet in use. In lieu of this requirement, manufacturers may use the standardized test group name designated by EPA;

* * * * *

21. Section 86.1809-01 is amended by adding paragraph (e) to read as follows:

§ 86.1809-01 Prohibition of defeat devices.

* * * * *

(e) For each test group of Tier 2 LDV/LLDTs and HLDT/MDPVs and interim non-Tier 2 LDV/LLDTs and HLDT/MDPVs the manufacturer must submit, with the Part II certification application, an engineering evaluation demonstrating to the satisfaction of the Administrator that a discontinuity in emissions of non-methane organic gases, carbon monoxide, oxides of nitrogen and formaldehyde measured on the Federal Test Procedure (subpart B of this part) does not occur in the temperature range of 20 to 86 degrees F. For diesel vehicles, the engineering evaluation must also include particulate emissions.

22. Section 86.1810-01 is amended by:

- a. adding two new sentences to the end of the introductory text;
- b. adding one new sentence to the end of paragraph (f);
- c. adding a new sentence to the end of paragraph (i)(6); and
- d. adding new paragraphs (i)(13), (i)(14), (o) and (p).

The additions read as follows:

§ 86.1810-01 General standards; increase in emissions; unsafe conditions; waivers.

* * * * * For Tier 2 and interim non-Tier 2 vehicles, this section also applies to hybrid electric vehicles and zero emission vehicles. Unless otherwise specified, requirements and provisions of this subpart applicable to methanol fueled vehicles are also applicable to Tier 2 and interim non-Tier 2 ethanol fueled vehicles.

* * * * *

(f) * * * * * Interim non-Tier 2 LDV/Ts may be certified to applicable Tier 1 exhaust emission standards at high altitude as set forth in §§ 86.1811-01, 86.1812-01, 86.1813-01, 86.1814-02 and 86.1815-02. Requirements to meet emission standards at high altitude are optional for interim non-Tier 2 MDPVs.

* * * * *

(i) * * * * *
(6) * * * * * For Tier 2 and interim non-Tier 2 vehicles, this provision does not

apply to enrichment that occurs upon cold start, warm-up conditions and rapid-throttle motion conditions ("tip-in" or "tip-out" conditions).

* * * * *

(13) *A/C-on specific calibrations.* (i) For Tier 2 and interim non-Tier 2 vehicles, A/C-on specific calibrations (e.g. air to fuel ratio, spark timing, and exhaust gas recirculation), may be used which differ from A/C-off calibrations for given engine operating conditions (e.g., engine speed, manifold pressure, coolant temperature, air charge temperature, and any other parameters).

(ii) Such calibrations must not unnecessarily reduce the NMHC+NO_x emission control effectiveness during A/C-on operation when the vehicle is operated under conditions which may reasonably be expected to be encountered during normal operation and use.

(iii) If reductions in control system NMHC+NO_x effectiveness do occur as a result of such calibrations, the manufacturer must, in the Application for Certification, specify the circumstances under which such reductions do occur, and the reason for the use of such calibrations resulting in such reductions in control system effectiveness.

(iv) A/C-on specific "open-loop" or "commanded enrichment" air-fuel enrichment strategies (as defined below), which differ from A/C-off "open-loop" or "commanded enrichment" air-fuel enrichment strategies, may not be used, with the following exceptions: Cold-start and warm-up conditions, or, subject to Administrator approval, conditions requiring the protection of the vehicle, occupants, engine, or emission control hardware. Other than these exceptions, such strategies which are invoked based on manifold pressure, engine speed, throttle position, or other engine parameters must use the same engine parameter criteria for the invoking of this air-fuel enrichment strategy and the same degree of enrichment regardless of whether the A/C is on or off. "Open-loop" or "commanded" air-fuel enrichment strategy is defined as enrichment of the air to fuel ratio beyond stoichiometry for the purposes of increasing engine power output and the protection of engine or emissions control hardware. However, "closed-loop biasing," defined as small changes in the air-fuel ratio for the purposes of optimizing vehicle emissions or driveability, must not be considered an "open-loop" or "commanded" air-fuel enrichment strategy. In addition, "transient" air-fuel enrichment strategy

(or "tip-in" and "tip-out" enrichment), defined as the temporary use of an air-fuel ratio rich of stoichiometry at the beginning or duration of rapid throttle motion, must not be considered an "open-loop" or "commanded" air-fuel enrichment strategy.

(14) *"Lean-on-cruise" calibration strategies.* (i) For Tier 2 and interim non-Tier 2 vehicles, the manufacturer must state in the Application for Certification whether any "lean-on-cruise" strategies are incorporated into the vehicle design. A "lean-on-cruise" air-fuel calibration strategy is defined as the use of an air-fuel ratio significantly greater than stoichiometry, during non-deceleration conditions at speeds above 40 mph. "Lean-on-cruise" air-fuel calibration strategies must not be employed during vehicle operation in normal driving conditions, including A/C usage, unless at least one of the following conditions is met:

(A) Such strategies are substantially employed during the FTP or SFTP;

(B) Such strategies are demonstrated not to significantly reduce vehicle NMHC+NO_x emission control effectiveness over the operating conditions in which they are employed; or

(C) Such strategies are demonstrated to be necessary to protect the vehicle occupants, engine, or emission control hardware.

(ii) If the manufacturer proposes to use a "lean-on-cruise" calibration strategy, the manufacturer must specify the circumstances under which such a calibration would be used, and the reason or reasons for the proposed use of such a calibration.

* * * * *

(o) Unless otherwise approved by the Administrator, manufacturers must measure NMOG emissions in accordance with the California Non-Methane Organic Gas Test Procedures. These procedures are incorporated by reference (see § 86.1).

(p) For gasoline and diesel-fueled Tier 2 and interim non-Tier 2 vehicles, manufacturers may measure non-methane hydrocarbons (NMHC) in lieu of NMOG. Manufacturers must multiply NMHC measurements from gasoline vehicles by an adjustment factor of 1.04 before comparing with the NMOG standard to determine compliance with that standard. Manufacturers may use other factors to adjust NMHC results to more properly represent NMOG results. Such factors must be based upon comparative testing of NMOG and NMHC emissions and be approved in advance by the Administrator.

23. Section 86.1811-01 is amended by adding a sentence to the end of the introductory text to read as follows:

§ 86.1811-01 Emission standards for light-duty vehicles.

* * * This section does not apply to 2004 and later model year vehicles, except as specifically referenced by § 86.1811-04.

* * * * *

24. Section 86.1811-04 is added to read as follows:

§ 86.1811-04 Emission standards for light-duty vehicles, light-duty trucks and medium-duty passenger vehicles.

(a) *Applicability.* (1) This section contains regulations implementing emission standards for all LDVs, LDTs and MDPVs. This section applies to 2004 and later model year LDVs, LDTs and MDPVs fueled by gasoline, diesel, methanol, ethanol, natural gas and liquefied petroleum gas fuels, except as noted. Additionally, this section contains provisions applicable to hybrid electric vehicles (HEVs) and zero emission vehicles (ZEVs). Multi-fueled vehicles must comply with all requirements established for each consumed fuel.

(2) This section also applies to LDVs, LDTs and MDPVs of model years prior to 2004, when manufacturers certify such vehicles to Tier 2 exhaust emission requirements to utilize alternate phase-in schedules, as allowed under paragraph (k)(6) of this section, and/or to earn early NO_x credits for use in complying with the Tier 2 fleet average NO_x standard which takes effect in the 2004 model year for LDV/LLDTs and 2008 for HLDT/MDPVs.

(3) Except where otherwise specified, this section applies instead of §§ 86.1811-01, 86.1812-01, 86.1813-01, 86.1814-01, 86.1814-02, 86.1815-01, and 86.1815-02.

(4) Except where otherwise specified, the provisions of this section apply equally to LDVs and all categories of LDTs, and to all MDPVs. Numerous provisions are applicable equally to HLDTs and MDPVs, as reflected by the term HLDT/MDPV. Numerous provisions apply equally to LDVs and LLDTs as reflected by the term LDV/LLDT.

(5) The exhaust emission standards and evaporative emission standards of this section apply equally to certification and in-use LDVs, LDTs and MDPVs, unless otherwise specified.

(b) *Test weight.* (1) Except as required in paragraphs (b)(2) and (b)(4) of this section, or permitted under paragraph (b)(3) of this section, emission testing of all LDVs, LDTs and MDPVs to

determine compliance with any exhaust or evaporative emission standard set forth in this Part must be on a loaded vehicle weight (LVW) basis, as that term is defined in this subpart.

(2) Interim non-Tier 2 HLDTs tested to Tier 1 SFTP standards, must be tested on an adjusted loaded vehicle weight (ALVW) basis, as that term is defined in this subpart, during the SC03 element of the SFTP.

(3) Except as required in paragraphs (b)(2) and (b)(4) of this section, interim non-Tier 2 HLDT/MDPVs may be tested on an ALVW basis or an LVW basis to demonstrate compliance with any exhaust or evaporative emission standard set forth in this Part.

(4) MDPVs certified to bin 11 standards from Tables S04-1 and -2 must be tested on an ALVW basis to demonstrate compliance with any exhaust emission standard set forth in this part.

(c) *Tier 2 FTP exhaust emission standards.* Exhaust emissions from Tier 2 vehicles must not exceed the standards in Table S04-1 of this section at full useful life when tested over the Federal Test Procedure (FTP) described in subpart B of this part. Exhaust emissions from Tier 2 vehicles must not exceed the standards in Table S04-2 of this section at intermediate useful life, if applicable, when tested over the FTP.

(1) For a given test group a manufacturer desires to certify to operate only on one fuel, the manufacturer must select a set of standards from the same bin (line or row) in Table S04-1 of this section for non-methane organic gases (NMOG), carbon monoxide (CO), oxides of

nitrogen (NO_x), formaldehyde (HCHO) and particulate matter (PM). The manufacturer must certify the test group to meet those standards, subject to all the applicable provisions of this subpart. The manufacturer must also certify the test group to meet the intermediate useful life standards (if any) in Table S04-2 of this section having the same EPA bin reference number as the chosen full useful life standards.

(2) For a given test group of flexible-fueled, bi-fuel or dual fuel vehicles when operated on the alcohol or gaseous fuel they are designed to use, manufacturers must select a bin of standards from Table S04-1 of this section and the corresponding bin in Table S04-2, if any. When these flexible-fueled, bi-fuel or dual fuel vehicles are certified to operate on gasoline or diesel fuel, the manufacturer may choose to comply with the next numerically higher applicable NMOG standard, if any, above the bin which contains the standards selected for certification on the gaseous or alcohol fuel.

(3)(i) For a given test group of flexible-fueled, bi-fuel or dual fuel vehicles certified to bin 10 in Table S04-1, when operated on the alcohol or gaseous fuel they are designed to use, manufacturers may choose to comply with a NMOG standard of 0.230 for LDV/LLDTs or 0.280 g/mi for HLDT/MDPVs at full useful life and corresponding intermediate life standards of 0.160 g/mi and 0.195 g/mi, respectively.

(ii) For a given test group of flexible-fueled, bi-fuel or dual fuel vehicles certified to bin 8 in Table S04-1, when

operated on the alcohol or gaseous fuel they are designed to use, manufacturers may choose to comply with a NMOG standard of 0.156 g/mi for LDV/LLDTs and 0.180 for HLDT/MDPVs at full useful life and corresponding intermediate life standards of 0.125 g/mi and 0.140 g/mi, respectively.

(4)(i) For bins where intermediate life standards are applicable, a manufacturer may elect not to comply with such standards. Except as permitted in paragraph (c)(4)(iv) of this section, the manufacturer must certify such vehicles to a useful life of 15 years or 150,000 miles, whichever occurs first, for LDV/LLDTs and HLDT/MDPVs.

(ii) A manufacturer electing not to comply with intermediate life standards, as permitted in paragraph (c)(4)(i) of this section, may not generate additional NO_x credits as described under § 86.1860-04 (g), except as permitted in paragraph (c)(4)(iii) of this section.

(iii) For bins where intermediate life standards are not applicable, or are specified to be optional by paragraph (c)(4)(iv) of this section, a manufacturer may generate additional NO_x credits subject to the provisions in § 86.1860-04 (g).

(iv) For diesel vehicles certified to bin 10, intermediate life standards are optional regardless of whether the manufacturer certifies the test group to a full useful life of 120,000 miles or 150,000 miles.

(5) In a given model year, an individual vehicle may not be included in both the Tier 2 program and an interim program.

(6) Tables S04-1 and S04-2 follow:

TABLE S04-1.—TIER 2 AND INTERIM NON-TIER 2 FULL USEFUL LIFE EXHAUST MASS EMISSION STANDARDS
[Grams per mile]

Bin No.	NO _x	NMOG	CO	HCHO	PM	Notes
11	0.9	0.280	7.3	0.032	0.12	a, c
10	0.6	0.156/0.230	4.2/6.4	0.018/0.027	0.08	a, b, d
9	0.3	0.090/0.180	4.2	0.018	0.06	a, b, e
8	0.20	0.125/0.156	4.2	0.018	0.02	b, f
7	0.15	0.090	4.2	0.018	0.02	
6	0.10	0.090	4.2	0.018	0.01	
5	0.07	0.090	4.2	0.018	0.01	
4	0.04	0.070	2.1	0.011	0.01	
3	0.03	0.055	2.1	0.011	0.01	
2	0.02	0.010	2.1	0.004	0.01	
1	0.00	0.000	0.0	0.000	0.00	

Notes:

^a This bin and its corresponding intermediate life bin are deleted at end of 2006 model year (end of 2008 model year for HLDTs and MDPVs).

^b Higher NMOG, CO and HCHO values apply for HLDTs and MDPVs only.

^c This bin is only for MDPVs.

^d Optional NMOG standard of 0.280 g/mi applies for qualifying LDT4s and qualifying MDPVs only.

^e Optional NMOG standard of 0.130 g/mi applies for qualifying LDT2s only.

^f Higher NMOG standard deleted at end of 2008 model year.

TABLE S04-2.—TIER 2 AND INTERIM NON-TIER 2 INTERMEDIATE USEFUL LIFE (50,000 MILE) EXHAUST MASS EMISSION STANDARDS
[grams per mile]

Bin No.	NO _x	NMOG	CO	HCHO	PM	Notes
11	0.6	0.195	5.0	0.022		a c f h
10	0.4	0.125/0.160	3.4/4.4	0.015/0.018		a b d f g h
9	0.2	0.075/0.140	3.4	0.015		a b c f h
8	0.14	0.100/0.125	3.4	0.015		b f h i
7	0.11	0.075	3.4	0.015		f h
6	0.08	0.075	3.4	0.015		f h
5	0.05	0.075	3.4	0.015		f h

Notes:

- ^a This bin deleted at end of 2006 model year (end of 2008 model year for HLDTs and MDPVs).
- ^b Higher NMOG, CO and HCHO values apply for HLDTs and MDPVs only.
- ^c This bin is only for MDPVs.
- ^d Optional NMOG standard of 0.195 g/mi applies for qualifying LDT4s and qualifying MDPVs only.
- ^e Optional NMOG standard of 0.100 g/mi applies for qualifying LDT2s only.
- ^f The full useful life PM standards from Table S04-1 also apply at intermediate useful life.
- ^g Intermediate life standards of this bin are optional for diesels.
- ^h Intermediate life standards are optional for vehicles certified to a useful life of 150,000 miles.
- ⁱ Higher NMOG standard deleted at end of 2008 model year.

(d) Fleet average NO_x Standards.

(1)(i) For a given individual model year's sales of Tier 2 vehicles, including model years during the phase-in years of the Tier 2 standards, manufacturers must comply with a fleet average oxides of nitrogen (NO_x) standard of 0.07 grams per mile. The manufacturer must calculate its fleet average NO_x emission level(s) as described in § 86.1860-04. Up through and including model year 2008, manufacturers must calculate separate fleet average NO_x emission levels for LDV/LLDTs and for HLDT/MDPVs as described in § 86.1860-04.

(ii) During a phase-in year, the manufacturer must comply with the 0.07 g/mi fleet average standard for the required phase-in percentage for that year as specified in paragraph (k)(1) of this section, or for the alternate phase-in percentage as permitted under paragraph (k)(6) of this section.

(2) For Early Tier 2 LDV/LLDTs. For model years prior to 2004, where the manufacturer desires to bank early Tier 2 NO_x credits as permitted under § 86.1861(c), the manufacturer must comply with a fleet average standard of 0.07 grams per mile for its Tier 2 LDV/LLDTs. Manufacturers must determine compliance with the NO_x fleet average standard according to regulations in § 86.1860-04 of this subpart.

(3) For Early Tier 2 HLDT/MDPVs. For model years prior to 2008, where the manufacturer desires to bank early Tier 2 NO_x credits as permitted under § 86.1861(c), the manufacturer must comply with a fleet average standard of 0.07 grams per mile for its Tier 2 HLDT/MDPVs. Manufacturers must determine compliance with the NO_x fleet average standard according to regulations in § 86.1860-04.

(e) Evaporative emission standards.

Consistent with the phase-in requirements in paragraph (k) of this section, evaporative emissions from gasoline-fueled, natural gas-fueled, liquefied petroleum gas-fueled, ethanol-fueled and methanol-fueled vehicles must not exceed the standards in this paragraph. The standards apply equally to certification and in-use vehicles, except that the spitback standard applies only to newly assembled vehicles.

(1) Diurnal-plus-hot soak evaporative hydrocarbon standards. Hydrocarbons for LDV/LLDTs, HLDTs and MDPVs must not exceed the diurnal plus hot soak standards shown in Table S04-3 for the full three diurnal test sequence and for the supplemental two diurnal test sequence. Table S04-3 follows:

TABLE S04-3.—LIGHT-DUTY DIURNAL PLUS HOT SOAK EVAPORATIVE EMISSION STANDARDS
[grams per test]

Vehicle category	3 day diurnal+hot soak	Supplemental 2 day diurnal+hot soak
LDV/LLDTs	0.95	1.2
HLDTs	1.2	1.5
MDPVs	1.4	1.75

(2) Running loss standard. Hydrocarbons for LDVs, LDTs and MDPVs measured on the running loss test must not exceed 0.05 grams per mile.

(3) Refueling emission standards. Refueling emissions must not exceed the following standards:

- (i) For gasoline-fueled, diesel-fueled and methanol-fueled LDVs, LDTs and

MDPVs: 0.20 grams hydrocarbon per gallon (0.053 grams per liter) of fuel dispensed.

(ii) For liquefied petroleum gas-fueled LDV, LDTs and MDPVs: 0.15 grams hydrocarbon per gallon (0.04 grams per liter) of fuel dispensed.

(iii) Refueling standards for HLDTs are subject to the phase-in requirements found in § 86.1810-01(k). MDPVs must also comply with the phase-in requirement in § 86.1810-01(k) and must be grouped with HLDTs to determine phase-in compliance.

(4) Spitback standards. For gasoline and methanol fueled LDV/Ts and MDPVs, hydrocarbons measured on the fuel dispensing spitback test must not exceed 1.0 grams hydrocarbon (carbon if methanol-fueled) per test.

(5) Evaporative emission requirements for interim vehicles. (i) LDV/Ts not certified to meet the evaporative emission standards in this paragraph (e) as permitted under the phase-in schedule of paragraph (k) of this section, must meet applicable evaporative emission standards in §§ 86.1811-01, 86.1812-01, 86.1813-01, 86.1814-02 or 86.1815-02 except that all LDV/Ts must meet the refueling emission standards in paragraph (e)(3) of this section.

(ii) MDPVs not certified to meet the evaporative emission standards in this paragraph (e) as permitted under the phase-in schedule of paragraph (k) of this section, must meet applicable evaporative emission standards for heavy-duty vehicles in § 86.099-10.

(6) In cases where applicable California emission standards are as stringent or more stringent than applicable standards specified under this paragraph (e), the Administrator may accept data indicating compliance with California standards to

demonstrate compliance for certification purposes with the standards required under this paragraph (e). The Administrator may require manufacturers to provide comparative test data to show that a vehicle meeting California standards under California test conditions and procedures will also meet the standards under this paragraph

(e) when tested under test conditions and procedures in this Part 86.

(f) *Supplemental exhaust emission standards for LDV/Ts.* (1) Supplemental exhaust emission standards are applicable to gasoline and diesel-fueled LDV/Ts but are not applicable to MDPVs, alternative fueled LDV/Ts, or flexible fueled LDV/Ts when operated on a fuel other than gasoline or diesel.

Except as otherwise specified in this paragraph (f), manufacturers must comply with 4000 mile and full useful life SFTP standards as determined in this paragraph (f). The 4000 mile SFTP standards must be taken from Table S04-4 and the full life SFTP standards must be calculated using the formula in paragraph (f)(2) of this section. Table S04-4 follows:

TABLE S04-4.—4000 MILE SFTP STANDARDS FOR TIER 2 AND INTERIM NON-TIER 2 LDVs AND LDTs

	US06		SC03	
	NMHC+NO _x (g/mi)	CO (g/mi)	NMHC+NO _x (g/mi)	CO (g/mi)
LDV/LDT1	0.14	8.0	0.20	2.7
LDT2	0.25	10.5	0.27	3.5
LDT3	0.4	10.5	0.31	3.5
LDT4	0.6	11.8	0.44	4.0

(2)(i) Manufacturers must calculate their applicable full useful life SFTP standards for NMHC+NO_x, PM and for CO, if using the weighted CO standard. If not using the weighted CO standard, manufacturers may use the full useful life standalone Tier 1 standards for US06 and SC03. To calculate the applicable full useful life weighted NMHC+NO_x, PM and CO standards, manufacturers must use the following formula and values from Table S04-1 in paragraph (c) of this section and values

from Tables S04-5 and S04-6 which follow:

$$\text{SFTP Standard} = \text{SFTP Standard}_1 - [0.35 \times (\text{FTP Standard}_1 - \text{Current FTP Standard})]$$

Where:

SFTP Standard = Applicable full life weighted SFTP standard for NMHC+NO_x, PM or CO. This standard must be rounded to two decimal places.

SFTP Standard₁ = Applicable full life Tier 1 SFTP standard for NMHC+NO_x or CO from Table S04-5. For PM only,

use FTP Standard₁ for SFTP Standard₁.

FTP Standard₁ = Applicable full life Tier 1 FTP standard from Table S04-6 in this paragraph (f). For the Tier 1 NMHC+NO_x standard, add the applicable NMHC and NO_x standards.

Current FTP Standard = Applicable full life FTP standard from Table S04-1 in paragraph (c) of this section. For the current NMHC+NO_x standard, add the NMOG and NO_x standards from the applicable bin.

TABLE S04-5.—TIER 1 FULL USEFUL LIFE SFTP STANDARDS

Vehicle category	NMHC + NO _x (weighted g/mi) ^{a, c}	CO (g/mi) ^{b, c}		
		US06	SC03	Weighted
LDV/LDT1	0.91 (0.65)	11.1 (9.0)	3.7 (3.0)	4.2 (3.4)
LDT2	1.37 (1.02)	14.6 (11.6)	4.9 (3.9)	5.5 (4.4)
LDT3	1.44	16.9	5.6	6.4
LDT4	2.09	19.3	6.4	7.3

^a Weighting for NMHC+NO_x and optional weighting for CO is 0.35x(FTP) + 0.28x(US06) + 0.37x(SC03).

^b CO standards are stand alone for US06 and SC03 with option for a weighted standard.

^c Intermediate life standards are shown in parentheses for diesel LDV/LLDTs opting to calculate intermediate life SFTP standards in lieu of 4,000 mile SFTP standards as permitted under paragraph (f)(6) of this section.

TABLE S04-6.—TIER 1 FULL USEFUL LIFE FTP STANDARDS (G/Ml)

Vehicle category	NMHC ^a	NO _x ^a	CO ^a	PM
LDV/LDT1	0.31 (0.25)	0.6 (0.4)	4.2 (3.4)	0.10
LDT2	0.40 (0.32)	0.97(0.7)	5.5 (4.4)	0.10
LDT3	0.46	0.98	6.4	0.10
LDT4	0.56	1.53	7.3	0.12

^a Intermediate life standards are shown in parentheses for diesel LDV/LLDTs opting to calculate intermediate life SFTP standards in lieu of 4,000 mile SFTP standards as permitted under paragraph (f)(6) of this section.

(ii)(A) Manufacturers must determine compliance with NMHC+NO_x, CO and PM weighted SFTP standards calculated in paragraph (f)(2)(i) of this section by

weighting their emission results as follows:

$$0.35 \times (\text{FTP}) + 0.28 \times (\text{US06}) + 0.37 \times (\text{SC03})$$

(B) The results of the calculation in paragraph (f)(2)(ii)(A) of this section

must be rounded to one more decimal place than the applicable standard calculated in paragraph (f)(2)(i) of this section and then compared with that standard.

(3) For interim non-Tier 2 gasoline, diesel and flexible-fueled LDT3s and LDT4s, manufacturers may, alternatively, meet the gasoline-fueled vehicle SFTP standards found in §§ 86.1814-02 and 86.1815-02, respectively.

(4) Interim non-Tier 2 gasoline, diesel and flexible-fueled LDV/LLDTs certified to bin 10 FTP exhaust emission standards from Table S04-1 in paragraph (c) of this section may meet the gasoline Tier 1 SFTP requirements found at § 86.1811-01(b).

(5) SFTP standards for PM are not applicable to interim non-Tier 2 LDV/Ts. For Tier 2 LDV/Ts, the 4000 mile PM standard is equal to the full life PM standard calculated under paragraph (f)(2) of this section. The requirements of this paragraph (f)(5) also apply to Tier 2 flexible fuel vehicles when operated on gasoline or diesel fuel. (See regulations in § 86.1829-01(b)(1)(iii)(B) regarding data submittal for PM results for gasoline vehicles.)

(6)(i) In lieu of complying with 4000 mile SFTP standards described in this paragraph, diesel LDV/LLDTs through model year 2006, may comply instead with intermediate life SFTP standards derived from Tier 1 intermediate life SFTP standards for gasoline vehicles.

(ii) To calculate intermediate life SFTP standards, substitute intermediate life Tier 1 FTP and SFTP values from Tables S04-5 and S04-6 in this paragraph (f), as appropriate, for the full life values in the equation in paragraph (f)(2)(i) of this section. Substitute the applicable intermediate life standards for the full life current FTP standard. If there is no applicable intermediate life standard use the full life current FTP standard.

(iii) A manufacturer of diesel LDV/LLDTs must declare which option it will use (4,000 mile or intermediate life standards) in Part I of its certification application.

(g) *Cold temperature exhaust emission standards.* These standards are applicable only to gasoline fueled LDV/Ts and MDPVs. For cold temperature exhaust emission standards, a useful life of 50,000 miles applies.

(1) For LDVs and LDT1s, the standard is 10.0 grams per mile CO.

(2) For LDT2s, LDT3s and LDT4s, and MDPVs the standard is 12.5 grams per mile CO.

(3) These standards do not apply to interim non-Tier 2 MDPVs.

(h) *Certification short test exhaust emission standards.* Certification short test emissions from all gasoline-fueled otto cycle LDV/Ts and MDPVs must not exceed the following standards:

(1) Hydrocarbons: 100 ppm as hexane, for certification and SEA testing; 220 ppm as hexane, for in-use testing.

(2) Carbon monoxide: 0.5% for certification and SEA testing; 1.2% for in-use testing.

(3) These standards do not apply to interim non-Tier 2 MDPVs.

(i) Idle CO standards and references to such standards in this subpart, do not apply to any 2004 or later model year LDV, LDT, or MDPV or to any LDV, LDT or MDPV certified to Tier 2 standards before model year 2004 for purposes of generating early NO_x credits or meeting the requirements of an alternative phase-in schedule that begins prior to the 2004 model year.

(j) *Highway NO_x exhaust emission standard.* The maximum projected NO_x emissions measured on the federal Highway Fuel Economy Test in 40 CFR part 600, subpart B, must not be greater than 1.33 times the applicable FTP NO_x standard to which the manufacturer certifies the test group. Both the projected emissions and the product of the NO_x standard and 1.33 must be rounded to the nearest 0.01 g/mi before being compared. This standard is not applicable to MDPVs.

(k) *Phase-in of the Tier 2 FTP exhaust and evaporative requirements; small volume manufacturer flexibilities.* (1) Manufacturers must comply with the phase-in requirements in Tables S04-7 and S04-8 of this paragraph (k) for the Tier 2 FTP exhaust emission requirements specified in paragraph (c) of this section. Separate phase-in schedules are provided for LDV/LLDTs and for HLDT/MDPVs. These requirements specify the minimum percentage of the manufacturer's LDV/LLDT and HLDT/MDPV U.S. sales, by model year, that must meet the Tier 2 requirements, including the applicable fleet average standard, for their full useful lives. As the terms LDV/LLDT and HLDT/MDPV imply, LDVs and LLDTs must be grouped together to determine compliance with these phase-in requirements and HLDTs and MDPVs must also be grouped together to determine compliance with these phase-in requirements. Tables S04-7 and S04-8 follow:

TABLE S04-7.—PHASE-IN PERCENTAGES FOR LDV/LLDT TIER 2 REQUIREMENTS

Model year	Percentage of LDV/LLDTs that must meet tier 2 requirements
2004	25

TABLE S04-7.—PHASE-IN PERCENTAGES FOR LDV/LLDT TIER 2 REQUIREMENTS—Continued

Model year	Percentage of LDV/LLDTs that must meet tier 2 requirements
2005	50
2006	75
2007 and subsequent	100

TABLE S04-8.—PHASE-IN PERCENTAGES FOR HLDT/MDPV TIER 2 REQUIREMENTS

Model year	Percentage of HLDT/MDPVs that must meet tier 2 requirements
2008	50
2009 and subsequent	100

(2) Manufacturers must also comply with the phase-in requirements in Tables S04-7 and S04-8 of this paragraph (k) for the evaporative emission requirements contained in paragraph (e) of this section.

(3) Manufacturers may opt to use different LDV/LLDTs and HLDT/MDPVs to meet the phase-in requirements for evaporative emissions and FTP exhaust emissions, provided that the manufacturer meets the minimum applicable phase-in requirements in Table S04-7 and Table S04-8 of this paragraph (k) for both FTP exhaust and evaporative emissions. A LDV, LDT or MDPV counted toward compliance with any phase-in requirement for FTP exhaust or evaporative standards, must comply with all applicable Tier 2 exhaust requirements or all applicable evaporative requirements, respectively, described in this section.

(4) LDVs, LDTs and MDPVs not certified to meet the Tier 2 FTP exhaust requirements during model years 2004-2008, as allowed under this subpart, are subject to the provisions of paragraph (l) of this section.

(5) *Provisions for small volume manufacturers* (i) Small volume manufacturers, as defined in this part, are exempt from the Tier 2 LDV/LLDT exhaust and evaporative emissions phase-in requirements for model years 2004, 2005 and 2006 in Table S04-7 of this paragraph (k), but must comply with the 100% requirement for the 2007 and later model years for exhaust and evaporative emissions. If not complying with Tier 2 requirements during 2004, 2005 and 2006, small volume

manufacturers must comply with the requirements for interim non-Tier 2 LDV/LLDTs.

(ii) Small volume manufacturers, as defined in this part, are exempt from the HLDT/MDPV exhaust and evaporative phase-in requirement for model year 2008 in Table S04-8 of this section but must comply with the 100% requirement for the 2009 model year. Small volume manufacturers are also exempt from the HLDT/MDPV interim fleet average NO_x standard (0.20 g/mi) and its phase-in for the 2004, 2005 and 2006 model years.

(iii) Small volume manufacturers must comply with the FTP exhaust emission standards from Tables S04-1 and 2 of paragraph (c) of this section for all HLDT/MDPVs of model years 2004 and later, except that 2004 model year HLDTs may comply with Tier 1 exhaust emission standards subject to the provisions of paragraph (l)(2)(vii) of this section, and 2004 model year MDPVs may comply with heavy-duty vehicle standards subject to the provisions of paragraph (l)(2)(viii) of this section. Small volume manufacturers must also comply with the 0.20 g/mi fleet average NO_x standard for 2007 and 2008 model year HLDT/MDPVs; the Tier 2 0.07 g/mi fleet average NO_x standard for the 2009 and later model year HLDT/MDPVs; and the evaporative emission standards in Table S04-3 of this section for the 2009 and later model years.

(6)(i) A manufacturer may elect an alternate phase-in schedule that results in 100% phase-in for LDV/LLDTs by 2007. Alternate phase-in schedules must produce a sum of at least 250% when the percentages of LDV/LLDTs certified to Tier 2 requirements for each model year from 2001 through 2007 are summed. As an example, a 10/25/50/65/100 percent phase-in that began in 2003 would have a sum of 250 percent and would be acceptable. However, a 10/25/40/70/100 percent phase-in that began the same year would have a sum of 245 percent and would not be acceptable.

(ii) A manufacturer electing this option for LDV/LLDTs may calculate its compliance with the evaporative standards in paragraph (e)(1) of this section separately from its compliance with Tier 2 exhaust standards, provided that the phase-in schedules for each separately produce a sum of at least 250 percent when calculated as described in paragraph (k)(6)(i) of this section. A vehicle counted towards compliance with any phase-in requirement for the Tier 2 exhaust standards or the evaporative standards in paragraph (e)(1) of this section, must comply with all applicable Tier 2 exhaust standards

or all evaporative standards, as applicable, described in this section.

(iii) In addition to the requirements of paragraphs (k)(6)(i) and (ii) of this section, except as permitted in paragraph (k)(6)(vii) of this section, a manufacturer of LDV/LLDTs electing to use an alternate phase-in schedule for compliance with the Tier 2 exhaust standards or the evaporative standards in paragraph (e)(1) of this section must ensure that the sum of the percentages of vehicles from model years 2001 through 2004, meeting such exhaust or evaporative standards, as applicable, is at least 25%.

(iv) A manufacturer may elect an alternate phase-in schedule that results in 100% phase-in for HLDT/MDPVs by 2009. The requirements of paragraphs (k)(6)(i) through (k)(6)(ii) of this section apply, except that for HLDT/MDPVs, the calculation described in paragraphs (k)(6)(i) and (k)(6)(ii) of this section may cover model years 2001 through 2009 and must produce a sum of at least 150%.

(v) A manufacturer electing to use any alternate phase-in schedule permitted under this section must provide in its Application for Certification for the first year in which it intends to use such a schedule, and in each succeeding year during the phase-in, the intended phase-in percentages for that model year and the remaining phase-in years along with the intended final sum of those percentages as described in this paragraph (k)(6). This information may be included with the information required under § 86.1844-01(d)(13). In its year end annual reports, as required under § 86.1844-01(e)(4) the manufacturer must include sufficient information so that the Administrator can verify compliance with the alternative phase-in schedule established under paragraph (k)(6) of this section.

(vi) Under an alternate phase-in schedule, the projected phase-in percentage is not binding for a given model year, provided the sums of the actual phase-in percentages that occur meet the appropriate total sums as required in paragraph (k)(6) of this section, and provided that 100% actual compliance is reached for the appropriate model year, either 2007 or 2009, as described in paragraph (k)(6) of this section.

(vii) A manufacturer unable to meet the 25% requirement in paragraph (k)(6)(iii) of this section, must:

(A) Ensure that the sum of the percentages of vehicles for model years 2001 through 2004, meeting such exhaust or evaporative standards, as applicable, is at least 20%.

(B) Subtract that sum of percentages for model years 2001 through 2004 from 25%, and multiply the unrounded result by 2.

(C) Round the product from paragraph (k)(6)(vii)(B) of this section to the nearest 0.1% and add that to 50%. That sum becomes the required phase-in percentage for the 2005 model year.

(D) Comply with the phase-in percentage for the 2005 model year determined in paragraph (k)(6)(vii)(C) of this section.

(E) Comply with a minimum phase-in percentage for the 2006 model year determined by the following equation:

$$\text{minimum phase-in percentage for 2006} \\ = [75\% - (2005_{\text{api}} - 2005_{\text{rpi}})]$$

Where:

2005_{rpi} = the required phase-in for the 2005 model year as determined in paragraph (k)(6)(vii)(C) of this section; and

2005_{api} = the manufacturer's actual phase-in quantity for the 2005 model year.

(7)(i) Sales percentages for the purpose of determining compliance with the phase-in of the Tier 2 requirements and the phase-in of the evaporative standards in paragraph (e)(1) of this section, must be based upon projected U.S. sales of LDV/LLDTs and HLDT/MDPVs of the applicable model year by the manufacturer to the point of first sale. Such sales percentages must be rounded to the nearest one tenth of a percent, and must not include vehicles and trucks projected to be sold to points of first sale in California or a state that has adopted California requirements for that model year as permitted under section 177 of the Act.

(ii) Alternatively, the manufacturer may petition the Administrator to allow actual volume produced for U.S. sales to be used in lieu of projected U.S. sales for purposes of determining compliance with the phase-in percentage requirements under this section. The manufacturer must submit its petition within 30 days of the end of the model year to the Vehicle Programs and Compliance Division. For EPA to approve the use of actual volume produced for U.S. sales, the manufacturer must establish to the satisfaction of the Administrator, that actual production volume is functionally equivalent to actual sales volume of LDV/LLDTs and HLDT/MDPVs sold in states other than California and states that have adopted California standards.

(iii) Manufacturers must submit information showing compliance with all phase-in requirements of this section

with its Part I application as required by § 86.1844(d)(13).

(1) *FTP exhaust standards for interim non-Tier 2 vehicles.*—(1) *FTP exhaust emission standards for interim non-Tier 2 LDV/LLDTs.* (i) LDV/LLDTs that are not used to meet the Tier 2 phase-in requirements including the Tier 2 fleet average NO_x requirement during the Tier 2 phase-in period (model years 2004–2006) must comply with the full useful life FTP exhaust emission standards listed in Table S04–1 of paragraph (c) of this section and the corresponding intermediate useful life standards, if any, in Table S04–2 of paragraph (c) of this section.

Manufacturers may choose the bin of full useful life standards to which they certify a test group of vehicles, subject to the requirements in paragraph (1)(3)(i) of this section. In a given model year, an individual vehicle may not be used to comply with both the Tier 2 fleet average NO_x standard and the applicable interim fleet average NO_x standard although vehicles from the same test group may be separated and the vehicles counted toward compliance with either program.

(ii) The provisions of paragraphs (c) (1), (2) and (3) of this section apply to flexible-fueled, dual fuel and multi-fuel interim non-Tier 2 LDV/LLDTs.

(iii) Only manufacturers that comply with the applicable FTP standards in Tables S04–1 and 2 of paragraph (c) of this section for all of their 2004 model year HLDTs and declare their intention to comply with the 2004 model year 25% phase-in requirement to the 0.20 g/mi interim fleet average NO_x standard for HLDTs (or HLD/MDPVs) described in this paragraph (1) may use the optional higher NMOG values for interim LDTs certified to bin 9 standards that are shown in Tables S04–1 and 2. Manufacturers must declare their intention to comply with the full 2004 model year 25% phase-in requirement in Part I of their HLDT or their HLD/MDPV, as applicable, certification applications.

(iv) The provisions of paragraph (c)(4) of this section apply to interim non-Tier 2 vehicles.

(2) *FTP exhaust emission standards for interim non-Tier 2 HLDTs and interim non-Tier 2 MDPVs.* (i) Except as permitted under paragraphs (1)(2) (vii) and (viii) of this section, HLDTs and MDPVs of model years 2004–2008 that are not used to meet the Tier 2 FTP phase-in requirements including the Tier 2 fleet average NO_x requirement must comply with the full useful life FTP exhaust emission standards listed in Table S04–1 of paragraph (c) of this section and, the corresponding

intermediate useful life standards, if any, in Table S04–2 of paragraph (c) of this section. Manufacturers may choose the bin of full useful life standards to which they certify a test group of vehicles, subject to the requirements in paragraph (1)(3)(ii) of this section.

(ii) Except as permitted under paragraphs (1)(2) (vii) and (viii) of this section, HLDTs and MDPVs of model years 2004–2008 that are not used to meet the Tier 2 FTP phase-in requirements including the Tier 2 fleet average NO_x requirement must comply with the fleet average NO_x standard described in paragraph (1)(3)(ii) of this section subject to the phase-in schedule in paragraph (1)(2)(iv) of this section, i.e. 25 percent of the HLDT and MDPVs must meet the fleet average standard of 0.20 g/mi in 2004, 50 percent in 2005, and so on.

(iii) Manufacturers may choose the bin of full useful life standards and corresponding intermediate life standards to which they certify test groups of HLDTs and MDPVs, subject to the requirements in paragraph (1)(3)(ii) of this section. Manufacturers may include HLDT/MDPVs in the interim program that are not used to meet the Tier 2 fleet average NO_x standard or the phase-in percentage requirements in the Tier 2 program or to generate Tier 2 NO_x credits. In a given model year, an individual vehicle may not be used to comply with both the Tier 2 fleet average NO_x standard and the applicable interim fleet average NO_x standard although vehicles from the same test group may be separated and the vehicles counted toward compliance with either program.

(iv) *Phase-in schedule for interim non-Tier 2 HLD/MDPVs.* Table S04–9 of this paragraph (1) specifies the minimum percentage of the manufacturer's interim non-Tier 2 HLD/MDPV U.S. sales, by model year, that must comply with the fleet average NO_x standard described in paragraph (1)(3)(ii) of this section. Table S04–9 follows:

Table S04–9.—Phase-in Percentages for Compliance With Interim Non-Tier 2 Fleet Average NO_x Standard for HLD/MDPVs

Model year	Percentage of non-tier 2 HLD/MDPVs that must meet interim non-tier 2 fleet average NO _x standard
2004	25
2005	50
2006	75

Table S04–9.—Phase-in Percentages for Compliance With Interim Non-Tier 2 Fleet Average NO_x Standard for HLD/MDPVs—Continued

Model year	Percentage of non-tier 2 HLD/MDPVs that must meet interim non-tier 2 fleet average NO _x standard
2007 and 2008	100

(v)(A) A manufacturer may elect an alternate phase-in schedule, beginning as early as the 2001 model year, that results in 100% compliance by 2007 with the fleet average NO_x standard for interim non-Tier 2 HLD/MDPVs described in paragraph (1)(3)(ii) of this section. The requirements of paragraph (k)(6) of this section apply to the selection of an alternate phase-in schedule.

(B) If a manufacturer elects not to bring all of its HLD/MDPVs into compliance with the interim requirements in 2004 as permitted under paragraphs (1)(2)(vii) and

(viii) of this section, it may still use an alternate phase-in schedule to attain 100% compliance with the interim fleet average NO_x standard for HLD/MDPVs, but the sum of phase-in percentages it must meet will be 225% rather than 250%. If the manufacturer commences its 2004 model year on or after December 21, 2003, for any HLD/MDPVs, the manufacturer must increase the 225% by the fraction of its 2004 model year HLD/MDPVs whose model year commenced on or after that date and which were brought into compliance with the 0.20 g/mi corporate average NO_x standard as required under paragraph (1)(2)(ix) of this section. The manufacturer must ensure that the sum of the percentages of vehicles up through model year 2005 complying with the interim fleet average NO_x standard is at least 50%.

(vi) The provisions of paragraphs (c) (1), (2) and (3) of this section apply to flexible-fueled, dual fuel and multi-fuel interim non-Tier 2 HLD/MDPVs.

(vii) For 2004 model year HLD test groups whose model year commences before December 21, 2003, the manufacturer may exempt such HLDTs from compliance with any requirements applicable to interim non-Tier 2 HLDTs, and such HLDTs must be produced in accordance with standards and requirements in §§ 86.1814–02 and §§ 86.1815–02. Such HLDTs must also meet the refueling emission standards

contained in paragraph (e)(3) of this section.

(viii) For 2004 model year heavy-duty vehicles whose model year commences before December 21, 2003, the manufacturer may exempt such vehicles from compliance with any requirements applicable to interim non-Tier 2 MDPVs. Exempted vehicles will not be considered MDPVs and must be produced in accordance with standards and requirements in § 86.099–10. Exempted vehicles are also exempted from refueling emission standards.

(ix) For 2004 model year HLDT and MDPV test groups whose model year commences on or after December 21, 2003, the manufacturer must comply with all interim non-Tier 2 requirements in this section.

(A) All such vehicles, but not more than 25% of the manufacturer's total sales of 2004 model year HLDT/MDPVs must meet the interim non-Tier 2 fleet average NO_x standard as described in paragraph (l)(3)(ii) of this section.

(B) All such vehicles but not more than 40% of the manufacturer's 2004 model year HLDT/MDPVs must comply with the refueling requirements in paragraph (e)(3) of this section.

(x) Only those manufacturers that comply with the interim non-Tier 2 FTP standards for all of their 2004 model year HLDTs and declare their intention to comply with the 2004 model year 25% phase-in requirement to the fleet average interim NO_x standard for HLDTs or HLDT/MDPVs of 0.20 g/mi described in paragraph (l) of this section may use the optional higher NMOG values for interim LDT4s certified to bin 10 standards that are shown in Tables S04–1 and 2 of paragraph (c) of this section. Manufacturers must declare their intention to comply with the 2004 model year 25% phase-in requirement in Part I of their HLDT certification applications.

(xi) Only those manufacturers that comply with the interim non-Tier 2 FTP standards for all of their 2004 model year MDPVs, and declare their intention to comply with the 2004 model year 25% phase-in requirement to the fleet average interim NO_x standard for MDPVs or HLDT/MDPVs of 0.20 g/mi described in paragraph (l) of this section may:

(A) Use the exhaust emission standards of bin 11 in Tables S04–1 and S04–2 of paragraph (c) in this section for MDPVs through model year 2008;

(B) For diesel-fueled vehicles, certify the engines in such vehicles, through model year 2007, to provisions in this part 86 applicable to diesel-fueled heavy-duty engines of the appropriate model year. Such diesel fueled vehicles

must not be included in any count or determination of compliance with the phase-in requirements applicable to interim non-Tier 2 MDPVs; and

(C) Use the optional higher NMOG values for interim LDT4s certified to bin 10 standards that are shown in Tables S04–1 and 2.

(xii) Manufacturers electing to comply with the provisions of paragraph (l)(2)(xi) of this section must declare their intention to comply with the 2004 model year 25% phase-in requirement to the fleet average interim NO_x standard for MDPVs or HLDT/MDPVs of 0.20 g/mi in Part I of their MDPV certification applications.

(xiii) Where diesel-fueled heavy-duty engines are used as permitted under paragraph (l)(2)(xi)(B) of this section, such engines must be treated as a separate averaging set—MDPV HDDEs—under the averaging, banking and trading provisions applicable to heavy-duty diesel engines. Only NO_x credits generated by engine-certified diesel engines that are used in other MDPVs can be applied to these engines. Manufacturers wishing to average, bank or trade credits for MDPV HDDEs must comply with the requirements in this paragraph and with all requirements applicable to heavy-duty engine averaging, banking and trading in this part.

(3) *Fleet average NO_x standards for interim non-Tier 2 LDV/Ts and MDPVs.*

(i) Manufacturers must comply with a fleet average full useful life NO_x standard for their interim non-Tier 2 LDV/LLDTs, on an annual basis, of 0.30 grams per mile.

(ii) Manufacturers must comply with a fleet average full useful life NO_x standard for their interim non-Tier 2 HLDT/MDPVs, excluding those HLDTs and MDPVs not yet covered by the phase-in requirement described in paragraph (l)(2)(ii) of this section, on an annual basis, of 0.20 grams per mile.

(iii) Manufacturers must determine their compliance with these interim fleet average NO_x standards for each model year by separately computing the sales weighted average NO_x level of all interim non-Tier 2 LDV/LLDTs and all interim non-Tier 2 HLDT/MDPVs (excluding those not yet phased in as described in paragraph (l)(2)(ii) of this section), using the methodology in § 86.1860.

(iv) Manufacturers may generate, bank, average, trade and use interim non-Tier 2 NO_x credits based on their NO_x fleet average as determined under paragraph (l)(3)(iii) of this section. Unless waived or modified by the Administrator, the provisions of § 86.1861 of this part apply to the

generation, banking, averaging, trading and use of credits generated by interim non-Tier 2 vehicles. NO_x credits generated by interim non-Tier 2 vehicles are not subject to any discount except as required by § 86.1861–04(e).

(m) *NMOG standards for diesel, flexible fueled and dual-fueled LDV/Ts and MDPVs.* (1) For diesel fueled LDV/Ts and MDPVs, the term “NMOG” in both the Tier 2 and interim non-Tier 2 standards means non-methane hydrocarbons.

(2) Flexible-fueled and dual-fuel Tier 2 and interim non-Tier 2 vehicles must be certified to NMOG exhaust emission standards both for operation on gasoline and on any alternate fuel they are designed to use. Manufacturers may measure NMHC in lieu of NMOG when flexible-fueled and dual-fuel vehicles are operated on gasoline, subject to the requirements of § 86.1810(p).

(n) *Hybrid electric vehicle (HEV) and Zero Emission Vehicle (ZEV) requirements.* For FTP and SFTP exhaust emissions, and unless otherwise approved by the Administrator, manufacturers must measure emissions from all HEVs and ZEVs according to the requirements and test procedures found in the document entitled California Exhaust Emission Standards and Test Procedures for 2003 and Subsequent Model Zero-Emission Vehicles and 2001 and Subsequent Model Hybrid Electric Vehicles, in the Passenger Car, Light-duty Truck and Medium-duty Vehicle Classes. This document is incorporated by reference (see § 86.1). Requirements and procedures in this document that are relevant only to complying with the California ZEV mandate, computing partial and full ZEV allowance credits, or generating and using ZEV credits, are not relevant to the federal program and may be disregarded. Discussion in that document relevant to fleet average NMOG standards and NMOG credits may also be disregarded.

(o) *NMOG measurement.* (1) Manufacturers must measure NMOG emissions in accordance with Part G of the California Non-Methane Organic Gas Test Procedures. These requirements are incorporated by reference (see § 86.1).

(2) Manufacturers must not apply reactivity adjustment factors (RAFTs) to NMOG measurements. See § 86.1841.

(p) *In-use standards.* (1) Table S04–10 of this paragraph (p) contains in-use emission standards applicable only to vehicles certified to the bins shown in the table. These standards apply to in-use testing performed by the manufacturer pursuant to regulations at §§ 86.1845–01, 86.1845–04 and 86.1846–01 and to in-use testing

performed by EPA. These standards do not apply to certification or Selective Enforcement Auditing.

(2) These standards apply only to LDV/LLDTs produced up through the 2008 model year, and HLDT/MDPVs produced up through the 2010 model year. These standards are subject to

other limitations described in paragraph (p)(3) of this section.

(3) For the first model year and also for the next model year after that, in which a test group of vehicles is certified to a bin of standards to which it has not previously been certified, the standards in Table S04-10 of this

paragraph (p) apply for purposes of in-use testing only. The standards apply equally to all LDV/Ts and MDPVs subject to the model year limitation in paragraph (p)(2) of this section. Table S04-10 follows:

TABLE S04-10—IN-USE COMPLIANCE STANDARDS (G/MI)

[Certification standards shown for reference purposes]

Bin number	Durability period (miles)	NO _x In-use	NO _x certification	NMOG In-use	NMOG certification
5	50,000	0.07	0.05	n/a	0.075
5	120,000	0.10	0.07	n/a	0.090
4	120,000	0.06	0.04	n/a	0.070
3	120,000	0.05	0.03	0.09	0.055
2	120,000	0.03	0.02	0.02	0.010

(4) For diesel vehicles certified to bin 10, separate in-use standards apply for NO_x and PM emissions. These standards are determined by multiplying the applicable NO_x and PM certification standards by factors of 1.2 and 1.35, respectively, and then rounding the result to one more decimal place than contained in the certification standard. The resultant standards do not apply for certification or selective enforcement auditing.

(q) *Hardship provision for small volume manufacturers.* (1) A small volume manufacturer may apply for relief from any applicable final phase-in model year contained in this section. Relief will only be available to defer required compliance with a completely new set of standards, a fleet average NO_x standard, and/or evaporative emission standard for 100% of affected vehicles for one model year. Thus, a small volume manufacturer that obtains relief may:

(i) Defer 100% compliance with the fleet average NO_x standard for interim LDV/LLDTs (0.30 g/mi) until 2005;

(ii) Defer 100% compliance with the evaporative emission standards and/or fleet average NO_x standard for Tier 2 LDV/LLDTs (0.07 g/mi) until 2008;

(iii) Defer 100% compliance with the requirements that interim HLDTs and MDPVs comply with applicable emission standards shown in Tables S04-1 and S04-2, until 2005;

(iv) Defer 100% compliance with the fleet average NO_x standard for interim HLDT/MDPVs (0.20 g/mi) until 2008; and

(v) Defer 100% compliance with the evaporative emission standards and/or fleet average NO_x standard for Tier 2 HLDT/MDPVs (0.07 g/mi) until 2010.

(2) Applications for relief must be in writing and must:

(i) Be submitted before the earliest date of noncompliance;

(ii) Include evidence that the manufacturer will incur severe economic hardship if relief is not granted;

(iii) Include evidence that the noncompliance will occur despite the best efforts of the manufacturer to comply; and

(iv) Include evidence that the manufacturer has made every reasonable effort to purchase credits to address the noncompliance, where applicable.

(r) *NMOG standard adjustment for direct ozone reducing devices.* (1) A manufacturer may obtain NMOG credit for use in certifying to the exhaust NMOG standards listed in paragraph (c) of this section and for use in complying with the in-use standards of paragraph (p) of this section, where applicable. This credit effectively allows the manufacturer to increase the exhaust NMOG emission standards listed in these paragraphs by the amount of the applicable credit. For example, if the applicable NMOG credit was 0.01 g/mi, and the vehicle was being certified in Bin 5, as described in Table S04-1 of paragraph (c) of this section, exhaust NMOG emissions must be no greater than 0.10 g/mi, as opposed to the normal NMOG certification standard of 0.09 g/mi in Bin 5.

(2) The NMOG credit must be determined through a two-step process.

(i) The first step must determine the ozone reduction potential of the direct ozone reducing device, the ozone reduction potential of exhaust NMOG reductions beyond Bin 5 of the Tier 2 standards, and the ratio of the two methods of reducing ambient ozone levels. The requirements for this step are described in paragraph (r)(3) of this section.

(ii) The second step must demonstrate and certify the relevant performance characteristics of the specific ozone

reducing device. The requirements for this step are described in paragraph (r)(4) of this section.

(3) The ozone reduction potential of the direct ozone reducing device and the ozone reduction potential of exhaust NMOG reductions beyond Bin 5 of the Tier 2 standards must be estimated using procedures which are approved by the Administrator in advance. At a minimum:

(i) The modeling must utilize an urban airshed model using up-to-date chemical and meteorological simulation techniques;

(ii) Four local areas must be modeled: New York City, Chicago, Atlanta and Houston;

(iii) The ozone episodes to be modeled must meet the selection criteria established by EPA for State ozone SIPs;

(iv) Photochemical and dispersion modeling must follow that used by EPA to project the ozone impacts of this rule, or its equivalent;

(v) Emission projections must be made for calendar year 2007 and be consistent with those used by EPA in support of this final rule, or reflect updates approved by EPA;

(vi) Baseline emissions (emissions prior to use of the direct ozone reducing device or the VOC emission reductions) must include the benefits of the Tier 2 emission and sulfur standards; as well as all other emission controls assumed in EPA's ozone modeling of the benefits of the Tier 2 and sulfur standards, as described in the Final Regulatory Impact Analysis to the Tier 2 and Sulfur Rule;

(vii) The ozone benefit of the direct ozone reducing device must assume a radiator area of 0.29 square meters, an air flow velocity through the radiator of 40% of vehicle speed, and an ozone reduction efficiency of 80%, or other

values as approved by the Administrator;

(viii) The ozone level of the air entering the direct ozone reducing device must be assumed to be 40% less than that existing in the grid cell where the vehicle is located;

(ix) The ozone benefit of VOC emission reductions must be modeled by assuming that all Tier 2 LDVs, LDTs and MDPVs meet an exhaust NMOG standard of 0.055 g/mi or lower instead of a 0.09 g/mi NMOG standard;

(x) The ozone reducing device must be assumed to be present on all of the Tier 2 LDVs, LDTs and MDPVs modeled as meeting the more stringent NMOG standard described in paragraph (r)(3)(ix) of this section;

(xi) The relationship between changes in exhaust NMOG emission standards and in-use VOC emissions must be determined sufficiently far in the future to ensure that the change in ozone being modeled is sufficiently large to allow comparison with the impact of the ozone reducing device;

(xii) LDV, LDT and MDPV emissions must be modeled using the updated Tier 2 emission model developed by EPA as part of the Tier 2 rulemaking (available from EPA upon request) or MOBILE6, once this model is available;

(xiii) The ozone benefit of the direct ozone reducing device must be the reduction in the peak one-hour ozone level anywhere in the modeled region on the day when ozone is at its highest;

(xiv) The NMOG credit in each local area must be the reduction in peak one hour ozone associated with use of the direct ozone reducing device divided by the reduction in peak one hour ozone associated with the more stringent exhaust NMOG emission standard multiplied by the reduction the exhaust NMOG standard (in g/mi) modeled in paragraph (r)(3)(ix) of this section; and

(xv) The NMOG credit applicable to the generic direct ozone reducing device modeled in paragraph (r)(3)(vii) of this section must be determined by arithmetically averaging the NMOG credit determined in paragraph (r)(3)(xiv) of this section for each of the four local areas.

(4) The manufacturer must submit data, using procedures which have been approved by the Administrator in advance, that demonstrate the following aspects of the device being certified:

(i) The air flowrate through the device as a function of vehicle speed;

(ii) The ozone reduction efficiency of the device over the useful life of the vehicle for a range of vehicle speeds and ozone levels;

(iii) The method through which the onboard diagnostic system will detect improper performance.

(5) The NMOG credit for the specific application of this technology tested under the provisions of paragraph (r)(4) of this section is the four-area NMOG credit determined in paragraph (r)(3)(xv) of this section scaled based on the performance of the specific application tested under the provisions of paragraph (r)(4) of this section relative to those assumed in paragraph (r)(3)(vii) of this section. This scaling must assume a linear relationship between the NMOG credit and three aspects of the direct ozone reducing device: radiator area, average air flow through the radiator relative to vehicle speed, and ozone reduction efficiency and the NMOG credit. The NMOG credit must be rounded to the nearest 0.001 g/mi. For example, if the NMOG credit determined in paragraph (r)(3)(xv) of this section was 0.01 g/mi and the specific direct ozone reducing device being certified had an area of 0.20 square meters, an air flow velocity of 30% of vehicle speed and an ozone reducing efficiency of 70%, and the generic ozone reducing device simulated in the ozone model under paragraph (r)(3)(vii) of this section had an area of 0.29 square meters, an air flow velocity of 40% of vehicle speed and an ozone reducing efficiency of 80%, the NMOG credit applicable to the specific device being certified would be: $0.01 \text{ g/mi} * (0.20/0.29) * (30\%/40\%) * (70\%/80\%) = 0.005$

25. Section 86.1812-01 is amended by adding a sentence to the end of the introductory text to read as follows:

§ 86.1812-01 Emission standards for light-duty trucks 1.

* * * This section does not apply to 2004 and later model year vehicles, except as specifically referenced by § 86.1811-04.

* * * * *

26. Section 86.1813-01 is amended by adding a sentence to the end of the introductory text to read as follows:

§ 86.1813-01 Emission standards for light-duty trucks 2.

* * * This section does not apply to 2004 and later model year vehicles, except as specifically referenced by § 86.1811-04.

* * * * *

27. Section 86.1814-02 is amended by adding a sentence to the end of the introductory text to read as follows:

§ 86.1814-02 Emission standards for light-duty trucks 3.

* * * This section does not apply to 2004 and later model year vehicles, except as specifically referenced by § 86.1811-04.

* * * * *

§ 86.1814-04 [Removed]

28. Section 86.1814-04 is removed.

29. Section 86.1815-02 is amended by adding a sentence to the end of the introductory text to read as follows:

§ 86.1815-02 Emission standards for light-duty trucks 4.

* * * This section does not apply to 2004 and later model year vehicles, except as specifically referenced by § 86.1811-04.

* * * * *

§ 86.1815-04 [Removed]

30. Section 86.1815-04 is removed.

31. Section 86.1824-01 is amended by revising the first sentence of the introductory text and adding paragraphs (a)(2)(iii), (a)(2)(iv) and (a)(2)(v) to read as follows:

§ 86.1824-01 Durability demonstration procedures for evaporative emissions.

This section applies to gasoline-, methanol-, liquefied petroleum gas-, and natural gas-fueled LDV/Ts and MDPVs.

* * *

(a) * * *

(2) * * *

(iii) For gasoline fueled vehicles certified to meet the evaporative emission standards set forth in § 86.1811-04(e)(1), any service accumulation method for evaporative emissions must employ gasoline fuel for the entire service accumulation period which contains ethanol in, at least, the highest concentration permissible in gasoline under federal law and that is commercially available in any state in the United States. Unless otherwise approved by the Administrator, the manufacturer must determine the appropriate ethanol concentration by selecting the highest legal concentration commercially available during the calendar year before the one in which the manufacturer begins its service accumulation. The manufacturer must also provide information acceptable to the Administrator to indicate that the service accumulation method is of sufficient design, duration and severity to stabilize the permeability of all non-metallic fuel and evaporative system components to the service accumulation fuel constituents.

(iv) For flexible-fueled, dual-fueled, multi-fueled, ethanol-fueled and methanol-fueled vehicles certified to

meet the evaporative emission standards set forth in § 86.1811-04(e)(1), any service accumulation method must employ fuel for the entire service accumulation period which the vehicle is designed to use and which the Administrator determines will have the greatest impact upon the permeability of evaporative and fuel system components. The manufacturer must also provide information acceptable to the Administrator to indicate that the service accumulation method is of sufficient design, duration and severity to stabilize the permeability of all non-metallic fuel and evaporative system components to service accumulation fuel constituents.

(v) A manufacturer may use other methods, based upon good engineering judgment, to meet the requirements of paragraphs (a)(2) (iii) and (iv) of this section, as applicable. These methods must be approved in advance by the Administrator and meet the objectives of paragraphs (a)(2) (iii) and (iv) of this section, as applicable: to provide assurance that the permeability of all non-metallic fuel and evaporative system components will not lead to evaporative emission standard exceedance under sustained exposure to commercially available alcohol-containing fuels for the useful life of the vehicle.

* * * * *

32. Section 86.1827-01 is amended by adding paragraph (e) to read as follows:

§ 86.1827-01 Test group determination.

* * * * *

(e) Unless otherwise approved by the Administrator, a manufacturer of hybrid electric vehicles must create separate test groups based on both the type of battery technology employed by the HEV and upon features most related to their exhaust emission characteristics.

33. Section 86.1829-01 is amended by adding paragraphs (b)(1)(iii)(E) and (d) to read as follows:

§ 86.1829-01 Durability and emission testing requirements; waivers.

* * * * *

- (b) * * * (1) * * *
- (iii) * * *

(E) In lieu of testing a gasoline or diesel fueled Tier 2 or interim non-Tier 2 vehicle for formaldehyde emissions when such vehicles are certified based upon NMHC emissions, a manufacturer may provide a statement in its application for certification that such vehicles comply with the applicable standards. Such a statement must be based on previous emission tests,

development tests, or other appropriate information.

* * * * *

(d)(1) Beginning in the 2004 model year, the exhaust emissions must be measured from all LDV/T exhaust emission data vehicles tested in accordance with the federal Highway Fuel Economy Test (HWFET; 40 CFR part 600, subpart B). The oxides of nitrogen emissions measured during such tests must be multiplied by the oxides of nitrogen deterioration factor computed in accordance with § 86.1823-01 and subsequent model year provisions, and then rounded and compared with the applicable emission standard in § 86.1811-04. All data obtained from the testing required under this paragraph (d) must be reported in accordance with the procedures for reporting other exhaust emission data required under this subpart.

(2) In the event that one or more emission data vehicles fail the applicable HWFET standard in § 86.1811-04, the manufacturer may submit to the Administrator engineering data or other evidence showing that the system is capable of complying with the standard. If the Administrator finds, on the basis of an engineering evaluation, that the system can comply with the HWFET standard, he or she may accept the information supplied by the manufacturer in lieu of the test data.

(3) The provisions of paragraphs (d)(1) and (d)(2) of this section do not apply to MDPVs.

34. Section 86.1837-01 is amended by designating the existing text as paragraph (a) and by adding paragraph (b) to read as follows:

§ 86.1837-01 Rounding of emission measurements.

* * * * *

(b) Fleet average NO_x value calculations, where applicable, must be rounded before comparing with the applicable fleet average standard and calculating credits generated or needed as follows: manufacturers must round to the same number of significant figures that are contained in the quantity of vehicles in the denominator of the equation used to compute the fleet average NO_x emissions, but to no less than one more decimal place than that of the applicable fleet average standard.

35. Section 86.1838-01 is amended by revising paragraphs (b)(1)(i) and (c)(2)(iii) to read as follows:

§ 86.1838-01 Small volume manufacturer certification procedures.

* * * * *

- (b) * * *
- (1) * * *

(i) The optional small-volume manufacturers certification procedures apply to LDV/Ts and MDPVs produced by manufacturers with U.S. sales, including all vehicles and engines imported under provisions of 40 CFR 85.1505 and 85.1509 (for the model year in which certification is sought) of fewer than 15,000 units (LDV/Ts, MDPVs, heavy-duty vehicles and heavy-duty engines combined).

* * * * *

- (c) * * *
- (2) * * *

(iii) The provisions of § 86.1845-01(c)(2) and § 86.1845-04(c)(2) that require one vehicle of each test group during high mileage in-use verification testing to have a minimum odometer mileage of 75 percent of the full useful life mileage for Tier 1 and NLEV LDV/Ts, or 90,000 (or 105,000) miles for Tier 2 and interim non-Tier 2 vehicles, do not apply.

* * * * *

36. Section 86.1840-01 is amended by adding paragraphs (c) and (d) to read as follows:

§ 86.1840-01 Special test procedures.

* * * * *

(c) Manufacturers of vehicles equipped with periodically regenerating trap oxidizer systems must propose a procedure for testing and certifying such vehicles including SFTP testing for the review and approval of the Administrator. The manufacturer must submit its proposal before it begins any service accumulation or emission testing. The manufacturer must provide with its submittal, sufficient documentation and data for the Administrator to fully evaluate the operation of the trap oxidizer system and the proposed certification and testing procedure.

(d) The provisions of paragraphs (a) and (b) of this section also apply to MDPVs.

37. Section 86.1841-01 is amended by revising paragraph (a)(1)(iii) and adding paragraph (e) to read as follows:

§ 86.1841-01 Compliance with emission standards for the purpose of certification.

- (a) * * *
- (1) * * *

(iii) For the SFTP composite standard of NMHC+NO_x, the measured results of NMHC and NO_x must each be adjusted by their corresponding deterioration factors before the composite NMHC+NO_x certification level is calculated. Where the applicable FTP exhaust hydrocarbon emission standard is an NMOG standard, the applicable NMOG deterioration factor must be used in place of the NMHC deterioration

factor, unless otherwise approved by the Administrator.

* * * * *

(e) Unless otherwise approved by the Administrator, manufacturers must not use Reactivity Adjustment Factors (RAFs) in their calculation of the certification levels of any pollutant, regardless of the fuel used in the test vehicle.

38. Section 86.1844-01 is amended by adding new paragraphs (d)(15), (d)(16), (e)(6) and (i) to read as follows:

§ 86.1844-01 Information requirements: Application for certification and submittal of information upon request.

* * * * *

(d) * * *

(15) For HEVs, unless otherwise approved by the Administrator, the information required by the "California Exhaust Emission Standards and Test Procedures for 2003 and Subsequent Model Zero-Emission Vehicles, and 2001 and Subsequent Model Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck and Medium-duty Vehicle Classes" must be supplied. These procedures are incorporated by reference (see § 86.1).

(16) (i) For Tier 2 and interim non-Tier 2 vehicles beginning with the 2004 model year, a statement indicating that the manufacturer has conducted an engineering analysis of the complete exhaust system to ensure that the exhaust system has been designed:

(A) To facilitate leak-free assembly, installation and operation for the full useful life of the vehicle; and

(B) To facilitate that such repairs as might be necessary on a properly maintained and used vehicle can be performed in such a manner as to maintain leak-free operation, using tools commonly available in a motor vehicle dealership or independent repair shop for the full useful life of the vehicle.

(ii) The analysis must cover the exhaust system and all related and attached components including the air injection system, if present, from the engine block manifold gasket surface to a point sufficiently past the last catalyst and oxygen sensor in the system to assure that leaks beyond that point will not permit air to reach the oxygen sensor or catalyst under normal operating conditions.

(iii) A "leak-free" system is one in which leakage is controlled so that it will not lead to a failure of the certification exhaust emission standards in-use.

(iv) The provisions of paragraphs (d)(16)(i) and (ii) do not apply to vehicles whose certification is carried

over from the NLEV program or carried across from the Cal LEV I program.

(e) * * *

(6) The NMOG/NMHC and HCHO to NMHC ratios established according to § 86.1845-04.

* * * * *

(i) For exhaust emission testing for Tier 2 and interim non-Tier 2 vehicles, if approved by the Administrator in advance, manufacturers may submit exhaust emission test data generated under California test procedures to comply with any certification and in-use testing requirements under this subpart. The Administrator may require supporting information to establish that differences between California and Federal exhaust testing procedures and fuels will not produce significant differences in emission results. The Administrator may require that in-use testing be performed using Federal test fuels as specified in § 86.113-04(a)(1).

39. Section 86.1845-04 is amended by:

- a. revising paragraph (a),
- b. revising paragraph (c)(2), and
- c. adding paragraph (f).

The revisions and additions read as follows:

§ 86.1845-04 Manufacturer in-use verification testing requirements

(a) *General requirements.* (1) A manufacturer of LDVs, LDTs and/or MDPVs must test, or cause to have tested, a specified number of LDVs, LDTs and MDPVs. Such testing must be conducted in accordance with the provisions of this section. For purposes of this section, the term vehicle includes light-duty vehicles, light-duty trucks and medium-duty vehicles.

(2) Unless otherwise approved by the Administrator, no emission measurements made under the requirements of this section may be adjusted by Reactivity Adjustment Factors (RAFs).

(3) Upon a manufacturer's written request, prior to in-use testing, that presents information to EPA regarding pre-conditioning procedures designed solely to remove the effects of high sulfur in gasoline from vehicles produced through the 2007 model year, EPA will consider allowing such procedures on a case-by-case basis. EPA's decision will apply to manufacturer in-use testing conducted under this section and to any in-use testing conducted by EPA.

* * * * *

(c) * * *

(2) Vehicle mileage:

(i) All test vehicles must have a minimum odometer mileage of 50,000 miles. At least one vehicle of each test

group must have a minimum odometer mileage of 75 percent of the full useful life mileage. See § 86.1838-01(c)(2) for small volume manufacturer mileage requirements; or

(ii) For engine families certified for a useful life of 150,000 miles, at least one vehicle must have a minimum odometer mileage of 105,000 miles. See § 86.1838-01(c)(2) for small volume manufacturer mileage requirements.

* * * * *

(f)(1) A manufacturer may conduct in-use testing on a test group by measuring NMHC exhaust emissions rather than NMOG exhaust emissions. The measured NMHC exhaust emissions must be multiplied by the adjustment factor used for certification of the test group, or another adjustment factor acceptable to the Administrator, to determine the equivalent NMOG exhaust emission values for the test vehicle. The equivalent NMOG exhaust emission value must be used in place of the measured NMOG exhaust emission value in determining the exhaust NMOC results. The equivalent NMOG exhaust emission values must be compared to the NMOG exhaust emission standard from the emission bin to which the test group was certified.

(2) For flexible-fueled LDVs, LDTs and MDPVs certified to NMOG standards, the manufacturer may request from the Administrator the use of a methanol (M85) or ethanol (E85) NMOG exhaust emission to gasoline NMHC exhaust emission ratio which must be established during certification for each emission data vehicle for the applicable test group. The results must be submitted to the Administrator in the Part II application for certification. After approval by the Administrator, the measured gasoline NMHC exhaust emissions must be multiplied by the M85 or E85 NMOG to gasoline NMHC ratio submitted in the application for certification for the test group to determine the equivalent NMOG exhaust emission values for the test vehicle. The equivalent NMOG exhaust emission value must be used in place of the measured NMOG exhaust emission value in determining the exhaust NMOC results. The equivalent NMOG exhaust emission values must be compared to the NMOG exhaust emission standard from the vehicle emission standard bin to which the test group was certified.

(3) If the manufacturer measures NMOG it must also measure and report HCHO emissions. As an alternative to measuring the HCHO content, if the manufacturer measures NMHC as permitted in paragraph (f)(1) of this section, the Administrator may approve,

upon submission of supporting data by a manufacturer, the use of HCHO to NMHC ratios. To request the use of HCHO to NMHC ratios, the manufacturer must establish during certification testing the ratio of measured HCHO exhaust emissions to measured NMHC exhaust emissions for each emission data vehicle for the applicable test group. The results must be submitted to the Administrator with the Part II application for certification. Following approval of the application for certification, the manufacturer may conduct in-use testing on the test group by measuring NMHC exhaust emissions rather than HCHO exhaust emissions. The measured NMHC exhaust emissions must be multiplied by the HCHO to NMHC ratio submitted in the application for certification for the test group to determine the equivalent HCHO exhaust emission values for the test vehicle. The equivalent HCHO exhaust emission values must be compared to the HCHO exhaust emission standard applicable to the test group.

40. Section 86.1846-01 is amended by revising paragraph (a) to read as follows:

§ 86.1846-01 Manufacturer in-use confirmatory testing requirements.

(a) *General requirements.* (1) A manufacturer of LDVs, LDTs and/or MDPVs must test, or cause testing to be conducted, under this section when the emission levels shown by a test group sample from testing under § 86.1845-01 exceeds the criteria specified in paragraph (b) of this section. The testing required under this section applies separately to each test group and at each test point (low and high mileage) that meets the specified criteria. The testing requirements apply separately for each model year starting with model year 2001.

(2) Except for vehicles certified under the NLEV provisions of subpart R of this part or unless otherwise approved by the Administrator, no emission measurements made under the requirements of this section may be adjusted by Reactivity Adjustment Factors (RAFs).

(3) For purposes of this section, the term vehicle includes light-duty vehicles, light-duty trucks and medium-duty vehicles.

(4) Upon a manufacturer's written request, prior to in-use testing, that presents information to EPA regarding pre-conditioning procedures designed solely to remove the effects of high sulfur in gasoline from vehicles produced through the 2007 model year, EPA will consider allowing such procedures on a case-by-case basis.

EPA's decision will apply to manufacturer in-use testing conducted under this section and to any in-use testing conducted by EPA.

* * * * *

41. Section 86.1848-01 is amended by adding paragraph (c)(7) to read as follows:

§ 86.1848-01 Certification.

* * * * *

(c) * * *

(7) For Tier 2 and interim non-Tier 2 vehicles, all certificates of conformity issued are conditional upon compliance with all provisions of §§ 86.1811-04, 86.1860-04, 86.1861-04 and 86.1862-04 both during and after model year production.

(i) Failure to meet the fleet average NO_x requirements of 0.07g/mi, 0.30 g/mi or 0.20 g/mi, as applicable, will be considered to be a failure to satisfy the terms and conditions upon which the certificate(s) was (were) issued and the vehicles sold in violation of the fleet average NO_x standard will not be covered by the certificate(s).

(ii) Failure to comply fully with the prohibition against selling credits that it has not generated or that are not available, as specified in § 86.1861-04, will be considered to be a failure to satisfy the terms and conditions upon which the certificate(s) was (were) issued and the vehicles sold in violation of this prohibition will not be covered by the certificate(s).

(iii) Failure to comply fully with the phase-in requirements of § 86.1811-04, will be considered to be a failure to satisfy the terms and conditions upon which the certificate(s) was (were) issued and the vehicles sold which do not comply with Tier 2 or interim non-Tier 2 requirements, up to the number needed to comply, will not be covered by the certificate(s).

(iv) For paragraphs (c)(7)(i) through (iii) of this section:

(A) The manufacturer must bear the burden of establishing to the satisfaction of the Administrator that the terms and conditions upon which the certificate(s) was (were) issued were satisfied.

(B) For recall and warranty purposes, vehicles not covered by a certificate of conformity will continue to be held to the standards stated or referenced in the certificate that otherwise would have applied to the vehicles.

* * * * *

42. Sections 86.1854 through 86.1859 are added and reserved.

43. Section 86.1860-04 is added to read as follows:

§ 86.1860-04 How to comply with the Tier 2 and interim non-Tier 2 fleet average NO_x standards.

(a) The fleet average standards referred to in this section are the corporate fleet average standards for FTP exhaust NO_x emissions set forth in: § 86.1811-04(d) for Tier 2 LDV/Ts and MDPVs (0.07 g/mi); § 86.1811-04(l)(3) for interim non-Tier 2 LDV/LLDTs (0.30 g/mi); and, § 86.1811-04(l)(3) for interim non-Tier 2 HLDT/MDPVs (0.20 g/mi). Unless otherwise indicated in this section, the provisions of this section apply to all three corporate fleet average standards, except that the interim non-Tier 2 fleet average NO_x standards do not apply to a manufacturer whose U.S. LDV/T and MDPV sales are 100% Tier 2 LDV/Ts and MDPVs.

(b)(1) Each manufacturer must comply with the applicable fleet average NO_x standard, or standards, on a sales weighted average basis, at the end of each model year, using the procedure described in this section.

(2) During a phase-in year, the manufacturer must comply with the applicable fleet average NO_x standard for the required phase-in percentage for that year as specified in § 86.1811-04(k)(1), or for the alternate phase-in percentage as permitted under § 86.1811-04(k)(6).

(c)(1)(i) Each manufacturer must separately compute the sales weighted averages of the individual NO_x emission standards to which it certified all its Tier 2 vehicles, interim non-Tier 2 LDV/LLDTs, and interim non-Tier 2 HLDT/MDPVs of a given model year as described in § 86.1804(l)(2).

(ii) For model years up to and including 2008, manufacturers must compute separate NO_x fleet averages for Tier 2 LDV/LLDTs and Tier 2 HLDT/MDPVs.

(2)(i) For model years up to and including 2008, if a manufacturer certifies its entire U.S. sales of Tier 2 or interim non-Tier 2 LDV/LLDTs or interim non-Tier 2 HLDT/MDPVs, to full useful life bins having NO_x standards at or below the applicable fleet average NO_x standard, that manufacturer may elect not to compute a fleet average NO_x level for that category of vehicles. A manufacturer making such an election must not generate NO_x credits for that category of vehicles for that model year.

(ii) For model years after 2008, if a manufacturer certifies its entire U.S. sales of Tier 2 vehicles to full useful life bins having NO_x standards at or below 0.07 gpm, that manufacturer may elect not to compute a fleet average NO_x level for its Tier 2 vehicles. A manufacturer

making such an election must not generate NO_x credits for that model year.

(d) The sales weighted NO_x fleet averages determined pursuant to paragraph (c) of this section must be compared with the applicable fleet average standard; 0.07 g/mi for NO_x for Tier 2 LDV/Ts and MDPVs, 0.30 g/mi for NO_x for interim non-Tier 2 LDV/LLDTs, and 0.20 g/mi for NO_x for interim non-Tier 2 HLDT/MDPVs. Each manufacturer must comply on an annual basis with the fleet average standards by:

(1) Showing that its sales weighted average NO_x emissions of its LDV/LLDTs, HLDT/MDPVs or LDV/Ts, as applicable, are at or below the applicable fleet average standard; or

(2) If the sales weighted average is not at or below the applicable fleet average standard, by obtaining and applying sufficient Tier 2 NO_x credits, interim non-Tier 2 LDV/LLDT NO_x credits or interim non-Tier 2 HLDT/MDPV NO_x credits, as appropriate, and as permitted under § 86.1861-04.

(i) Manufacturers may not use NMOG credits generated under the NLEV program in subpart R of this part to meet any Tier 2 or interim non-Tier 2 NO_x fleet average standard.

(ii) Tier 2 NO_x credits may not be used to meet any fleet average interim non-Tier 2 NO_x standard except as permitted by § 86.1860-04(e)(1).

(iii) Interim non-Tier 2 NO_x credits may not be used to meet the Tier 2 fleet average NO_x standard.

(iv) Interim non-Tier 2 NO_x credits from HLDT/MDPVs may not be used to meet the fleet average NO_x standard for interim non-Tier 2 LDV/LLDTs, and interim non-Tier 2 credits from LDV/LLDTs may not be used to meet the fleet average NO_x standard for interim non-Tier 2 HLDT/MDPVs.

(e) (1) Manufacturers that cannot meet the requirements of paragraph (d) of this section, may carry forward a credit deficit for three model years, but must not carry such deficit into the fourth year. When applying credits to reduce or eliminate a deficit under the fleet average standard for interim LDV/LLDTs or interim HLDT/MDPVs, that has been carried forward into a year subsequent to its generation, a manufacturer may apply credits from Tier 2 LDV/LLDTs or Tier 2 HLDT/MDPVs, respectively, as well as from the appropriate group of interim vehicles. A manufacturer must not use interim credits to reduce or eliminate any NO_x credit deficit under the Tier 2 fleet average standard.

(2) A manufacturer carrying a credit deficit into the third year must generate or obtain credits to offset that deficit and apply them to the deficit at a rate of 1.2:1, (i.e. deficits carried into the third model year must be repaid with credits equal to 120 percent of the deficit).

(3) A manufacturer must not bank credits for future model years or trade credits to another manufacturer during a model year into which it has carried a deficit.

(f) *Computing fleet average NO_x emissions.* (1) Manufacturers must separately compute these fleet NO_x averages using the equation contained in paragraph (f)(2) of this section:

(i) Their Tier 2 LDV/LLDT and Tier 2 HLDT/MDPV fleet average NO_x emissions for each model year through 2008;

(ii) Their combined Tier 2 LDV/T and MDPV fleet average NO_x emissions for each model year after 2008;

(iii) Their interim non-Tier 2 LDV/LLDT fleet average NO_x emissions for each model year through 2006; and

(iv) Their interim non-Tier 2 HLDT/MDPV fleet average NO_x emissions for each model year through 2008.

(2) The equation for computing fleet average NO_x emissions is as follows:

$$\frac{\sum (N \times \text{NO}_x \text{ emission standard})}{\text{Total number of vehicles of the appropriate category (e.g., all LDV/Ts and MDPVs, or interim non-Tier 2 HLDT/MDPVs, etc.) sold including HEVs and ZEVs}}$$

Where:

N = The number of vehicles sold in the applicable category that were certified for each corresponding NO_x emission bin. N must be based on vehicles counted to the point of first sale.

Emission standard = The individual full useful life NO_x emission standard for each bin for which the manufacturer had sales.

(3) The results of the calculation in paragraph (f)(2) of this section must be rounded as required by § 86.1837-01.

(4) When approved in advance by the Administrator, the numerator in the equation in paragraph (f)(2) of this section may be adjusted downward by the product of the number of HEVs from each NO_x emission bin times a HEV NO_x contribution factor determined through mathematical estimation of the reduction in NO_x emissions over the test procedure used to certify the HEVs. The reduction in NO_x emissions must be determined using good engineering

judgement and reflect the relation in actual full useful life NO_x emissions to the full useful life NO_x standards for the certification bin applicable to the vehicles. The Administrator may require that calculation of the HEV NO_x contribution factor include vehicle parameters such as vehicle weight, portion of time during the test procedure that the HEV operates with zero exhaust emissions, zero emission range, NO_x emissions from fuel-fired heaters and NO_x emissions from electricity production and storage.

(g) *Additional credits for vehicles certified to 150,000 mile useful lives.* (1) A manufacturer may certify any test group to an optional useful life of 15 years or 150,000 miles, whichever occurs first.

(2)(i) For any test group certified to the optional 15 year/150,000 mile useful life, the manufacturer may generate additional NO_x credits, except as prohibited in paragraph (g)(3) of this section.

(ii) The manufacturer must calculate these extra NO_x credits, where permitted, by substituting an adjusted NO_x standard for the applicable NO_x standard from the full useful life certification bin when it calculates the applicable fleet average NO_x emissions by the procedure in paragraph (f) of this section. The adjusted standard must be equal to the applicable full useful life NO_x standard multiplied by 0.85 and rounded to the same number of decimal places as the applicable full useful life NO_x standard.

(3) A manufacturer electing not to comply with applicable intermediate life standards as permitted under § 86.1811-04(c)(4) may not generate additional credits from vehicles certified to a useful life of 15 years/150,000 miles; except that, for bins where such intermediate life standards do not exist or are specifically deemed to be optional in § 86.1811-04(c)(4), the manufacturer may generate additional

NO_x credits from vehicles certified to a useful life of 15 years/150,000 miles.

(h) *Additional credits for vehicles certified to low bins.* A manufacturer may obtain additional NO_x credits by certifying vehicles to bins 1 and/or 2 in model years from 2001 through 2005 subject to the following requirements:

(1) When computing the fleet average Tier 2 NO_x emissions using the formula in paragraph (f)(2) of this section, the manufacturer may multiply the number (N) of vehicles certified to bins 1 and 2 by the applicable multiplier shown in Table S04–11. These multipliers may not be used after model year 2005. The table follows:

TABLE S04–11—MULTIPLIERS FOR ADDITIONAL TIER 2 NO_x Credits for Bin 1 and 2 LDV/Ts.

Bin	Model year	Multiplier
2	2001, 2002, 2003, 2004, 2005.	1.5
1	2001, 2002, 2003, 2004, 2005.	2.0

(2) [Reserved]

44. Section 86.1861–04 is added to read as follows:

§ 86.1861–04 How do the Tier 2 and interim non-Tier 2 NO_x averaging, banking and trading programs work?

(a) *General provisions for Tier 2 credits and debits.* (1) A manufacturer whose Tier 2 fleet average NO_x emissions exceeds the 0.07 g/mile standard must complete the calculation at paragraph (b) of this section to determine the size of its NO_x credit deficit. A manufacturer whose Tier 2 fleet average NO_x emissions is less than or equal to the 0.07 g/mile standard must complete the calculation in paragraph (b) of this section if it desires to generate NO_x credits. In either case, the number of credits or debits determined in the calculation at paragraph (b) of this section must be rounded to the nearest whole number.

(2) Credits generated according to the calculation in paragraph (b)(1) of this section may be banked for future use or traded to another manufacturer.

(3) NO_x credits are not subject to any discount or expiration date except as required under the deficit carryforward provisions of § 86.1860–04(e)(2).

(4) If a manufacturer calculates that it has negative credits (debits or a credit deficit) for a given model year, it must obtain sufficient credits, as required under § 86.1860–04(e)(2), from vehicles produced by itself or another manufacturer in a model year no later than the third model year following the model year for which it calculated the credit deficit. (Example: if a

manufacturer calculates that it has a NO_x credit deficit for the 2008 model year, it must obtain sufficient NO_x credits to offset that deficit from its own production or that of other manufacturers' 2011 or earlier model year vehicles.)

(5) A small volume manufacturer that has opted not to meet all phase-in requirements as permitted under § 86.1811–04(k)(5), must:

(i) Demonstrate compliance or obtain appropriate credits to comply with the 0.30 g/mi. fleet average NO_x standard for interim LDV/LLDTs for 100% of its LDV/LLDTs in 2004, in order to carry forward a credit deficit for later model year interim LDV/LLDTs; and

(ii) Demonstrate compliance or obtain appropriate credits to comply with the 0.07 g/mi. fleet average NO_x standard for 100% of its LDV/LLDTs in 2007, in order to carry forward a credit deficit for later model year Tier 2 LDV/LLDTs; and

(iii) Demonstrate compliance or obtain appropriate credits to comply with the 0.20 g/mi. fleet average interim NO_x standard for 100% of its HLDT/MDPVs in 2007, in order to carry forward a credit deficit for later model year interim HLDT/MDPVs.

(6)(i) Manufacturers may not use NO_x credits to comply with the NLEV requirements of subpart R of this part.

(ii) Manufacturers may not use NMOG credits generated by vehicles certified to the NLEV requirements of subpart R of this part to comply with any NO_x requirements of this subpart.

(iii) Manufacturers may not use NO_x credits generated by interim non-Tier 2 vehicles to comply with the fleet average NO_x standard for Tier 2 vehicles.

(iv) Manufacturers may not use NO_x credits generated by Tier 2 vehicles to comply with any fleet average NO_x standard for interim non-Tier 2 vehicles, except as permitted under § 86.1860–04(e).

(v) Manufacturers may not use NO_x credits generated by interim non-Tier 2 LDV/LLDTs to comply with the fleet average NO_x standard for interim non-Tier 2 HLDT/MDPVs.

(vi) Manufacturers may not use NO_x credits generated by interim non-Tier 2 HLDT/MDPVs to comply with the fleet average NO_x standard for interim non-Tier 2 LDV/LLDTs.

(vii) Manufacturers may not use NO_x credits generated by Tier 2 LDV/LLDTs to comply with the Tier 2 NO_x average standard for HLDT/MDPVs before the 2009 model year.

(viii) Manufacturers may not use NO_x credits generated by Tier 2 HLDT/MDPVs to comply with the Tier 2 NO_x average standard for LDV/LLDTs before the 2009 model year.

(7) Manufacturers may bank Tier 2 NO_x credits for later use to meet the

Tier 2 fleet average NO_x standard or trade them to another manufacturer. Credits are earned on the last day of the model year. Before trading or carrying over credits to the next model year, a manufacturer must apply available credits to offset any credit deficit, where the deadline to offset that credit deficit has not yet passed.

(8) There are no property rights associated with NO_x credits generated under this subpart. Credits are a limited authorization to emit the designated amount of emissions. Nothing in this Part or any other provision of law should be construed to limit EPA's authority to terminate or limit this authorization through a rulemaking.

(b) *Calculating Tier 2 credits and debits.* (1) Manufacturers that achieve fleet average NO_x values from the calculation in § 86.1860–04(f), lower than the applicable fleet average NO_x standard, may generate credits for a given model year, in units of vehicle-g/mi NO_x, determined in this equation:

$$[(\text{Fleet Average NO}_x \text{ Standard}) - (\text{Manufacturer's Fleet Average NO}_x \text{ Value})] + (\text{Total number of Tier 2 Vehicles Sold, Including ZEVs and HEVs})$$

Where: The number of Tier 2 vehicles sold is based on the point of first sale and does not include vehicles sold in California or a state that adopts, and has in effect for that model year, California emission requirements.

(2) Where the result of the calculation in paragraph (b)(1) of this section is a negative number, the manufacturer must generate negative NO_x credits (debits).

(c) *Early banking.* (1)(i) Manufacturers may certify LDV/LLDTs to the Tier 2 FTP exhaust standards in § 86.1811–04 for model years 2001–2003 in order to bank credits for use in the 2004 and later model years. Such vehicles must also meet SFTP exhaust emission standards specified in § 86.1811–04.

(ii) Manufacturers may certify HLDT/MDPVs to the Tier 2 FTP exhaust standards in § 86.1811–04 for model years 2001–2007 in order to bank credits for use in the 2008 and later model years. Such vehicles must also meet applicable SFTP exhaust emission standards specified in § 86.1811–04.

(iii) This process is referred to as "early banking" and the resultant credits are referred to as "early credits". In order to bank early credits, a manufacturer must comply with all exhaust emission standards and requirements applicable to Tier 2 LDV/LLDTs and/or HLDT/MDPVs, as applicable, except as allowed under paragraph (c)(4) of this section.

(2) To generate early credits, a manufacturer must separately compute

the sales weighted NO_x average of the LDV/LLDTs and HLDT/MDPVs it certifies to the Tier 2 exhaust requirements and separately compute credits using the calculations in this section and in § 86.1860-04.

(3) Early HLDT/MDPV credits may not be applied to LDV/LLDTs before the 2009 model year. Early LDV/LLDT credits may not be applied to HLDT/MDPVs before the 2009 model year.

(4) Manufacturers may generate early Tier 2 credits from LDVs, LDT1s and LDT2s that are certified to a full useful life of 100,000 miles, provided that the credits are prorated by a multiplicative factor of 0.833 (the quotient of 100,000/120,000). Where a manufacturer has both 100,000 and 120,000 mile full useful life vehicles for which it desires to bank early credits, it must compute the credits from each group of vehicles separately and then add them together.

(5) Manufacturers may bank early credits for later use to meet the Tier 2 fleet average NO_x standard or trade them to another manufacturer subject to the restriction in paragraph (c)(3) of this section.

(6) Early credits must not be used to comply with the fleet average NO_x standards for interim non-Tier 2 vehicles.

(7) Nothing in this section prevents the use of the NMOG values of 2003 and earlier model year LDV/LLDTs from being used in calculations of the NMOG fleet average and subsequent NMOG credit generation, under subpart R of this part.

(d) *Reporting and recordkeeping for Tier 2 NO_x credits including early credits.* Each manufacturer must comply with the reporting and recordkeeping requirements of § 86.1862-04.

(e) *Fleet average NO_x debits.* (1) Manufacturers must offset any debits for a given model year by the fleet average NO_x reporting deadline for the third model year following the model year in which the debits were generated as required in § 86.1860.04(e)(2). Manufacturers may offset debits by generating credits or acquiring credits generated by another manufacturer.

(2)(i) Failure to meet the requirements of paragraphs (a) through (d) of this section and of this paragraph (e), within the required timeframe for offsetting debits will be considered to be a failure to satisfy the conditions upon which the certificate(s) was issued and the individual noncomplying vehicles not covered by the certificate must be determined according to this section.

(ii) If debits are not offset within the specified time period, the number of vehicles not meeting the fleet average NO_x standards and not covered by the

certificate must be calculated by dividing the total amount of debits for the model year by the fleet average NO_x standard applicable for the model year in which the debits were first incurred.

(iii) EPA will determine the vehicles for which the condition on the certificate was not satisfied by designating vehicles in those test groups with the highest certification NO_x emission values first and continuing until a number of vehicles equal to the calculated number of noncomplying vehicles as determined above is reached. If this calculation determines that only a portion of vehicles in a test group contribute to the debit situation, then EPA will designate actual vehicles in that test group as not covered by the certificate, starting with the last vehicle produced and counting backwards.

(3) If a manufacturer ceases production of LDV/Ts and MDPVs or is purchased by, merges with or otherwise combines with another manufacturer, the manufacturer continues to be responsible for offsetting any debits outstanding within the required time period. Any failure to offset the debits will be considered to be a violation of paragraph (e)(1) of this section and may subject the manufacturer to an enforcement action for sale of vehicles not covered by a certificate, pursuant to paragraph (e)(2) of this section.

(4) For purposes of calculating the statute of limitations, a violation of the requirements of paragraph (e)(1) of this section, a failure to satisfy the conditions upon which a certificate(s) was issued and hence a sale of vehicles not covered by the certificate, all occur upon the expiration of the deadline for offsetting debits specified in paragraph (e)(1) of this section.

(f) *NO_x credit transfers.* (1) EPA may reject NO_x credit transfers if the involved manufacturers fail to submit the credit transfer notification in the annual report.

(2) A manufacturer may not sell credits that are not available for sale pursuant to the provisions in paragraphs (a)(2) and (a)(7) of this section.

(3) In the event of a negative credit balance resulting from a transaction, both the buyer and seller are liable, except in cases involving fraud. EPA may void *ab initio* the certificates of conformity of all engine families participating in such a trade.

(4)(i) If a manufacturer transfers a credit that it has not generated pursuant to paragraph (b) of this section or acquired from another party, the manufacturer will be considered to have generated a debit in the model year that the manufacturer transferred the credit. The manufacturer must offset such

debits by the deadline for the annual report for that same model year.

(ii) Failure to offset the debits within the required time period will be considered a failure to satisfy the conditions upon which the certificate(s) was issued and will be addressed pursuant to paragraph (e) of this section.

(g) *Interim non-Tier 2 NO_x credits and debits; Interim non-Tier 2 averaging, banking and trading.* Interim non-Tier 2 NO_x credits must be generated, calculated, tracked, averaged, banked, traded, accounted for and reported upon separately from Tier 2 credits. The provisions of this section applicable to Tier 2 NO_x credits and debits and Tier 2 averaging banking and trading are applicable to interim non-Tier 2 LDV/LLDTs and interim non-Tier 2 HLDT/MDPVs with the following exceptions:

(1) Provisions for early banking under paragraph (c) of this section do not apply.

(2) The fleet average NO_x standard used for calculating credits is 0.30 grams per mile for interim non-Tier 2 LDV/LLDTs and 0.20 g/mi for interim non-Tier 2 HLDT/MDPVs. (The interim non-Tier 2 NO_x standard of 0.30 (or 0.20) g/mi replaces 0.07 in the text and calculation in this section.)

(3) Interim non-Tier 2 NO_x credit deficits may be carried forward for three years subject to the requirements of § 86.1860-04(e).

45. Section 86.1862-04 is added to read as follows:

§ 86.1862-04 Maintenance of records and submittal of information relevant to compliance with fleet average NO_x standards.

(a) *Maintenance of records.* (1) The manufacturer producing any light-duty vehicles and/or light-duty trucks subject to the provisions in this subpart must establish, maintain, and retain the following information in adequately organized and indexed records for each model year:

(i) Model year;

(ii) Applicable fleet average NO_x standard: 0.07g/mi for Tier 2 LDV/Ts; 0.30 g/mi for interim non-Tier 2 LDV/LLDTs; or 0.20 g/mi for interim non-Tier 2 HLDT/MDPVs;

(iii) Fleet average NO_x value achieved; and

(iv) All values used in calculating the fleet average NO_x value achieved.

(2) The manufacturer producing any LDV/Ts or MDPVs subject to the provisions in this subpart must establish, maintain, and retain the following information in adequately organized and indexed records for each LDV/T or MDPV subject to this subpart:

(i) Model year;

(ii) Applicable fleet average NO_x standard;

(iii) EPA test group;

(iv) Assembly plant;

(v) Vehicle identification number;

(vi) NO_x standard to which the LDV/T or MDPV is certified; and

(vii) Information on the point of first sale, including the purchaser, city, and state.

(3) The manufacturer must retain all records required to be maintained under this section for a period of eight years from the due date for the annual report. Records may be retained as hard copy or reduced to microfilm, ADP diskettes, and so forth, depending on the manufacturer's record retention procedure; provided, that in every case all information contained in the hard copy is retained.

(4) Nothing in this section limits the Administrator's discretion to require the manufacturer to retain additional records or submit information not specifically required by this section.

(5) Pursuant to a request made by the Administrator, the manufacturer must submit to the Administrator the information that the manufacturer is required to retain.

(6) EPA may void *ab initio* a certificate of conformity for a vehicle certified to emission standards as set forth or otherwise referenced in this subpart for which the manufacturer fails to retain the records required in this section or to provide such information to the Administrator upon request.

(b) *Reporting.* (1) Each covered manufacturer must submit an annual report. Except as provided in paragraph (b)(2) of this section, the annual report

must contain, for each applicable fleet average NO_x standard, the fleet average NO_x value achieved, all values required to calculate the NO_x value, the number of credits generated or debits incurred, and all the values required to calculate the credits or debits. The annual report must contain the resulting balance of credits or debits.

(2) When a manufacturer calculates compliance with the fleet average NO_x standard using the provisions in § 86.1860-04(c)(2), then the annual report must state that the manufacturer has elected to use such provision and must contain the fleet average NO_x standard as the fleet average NO_x value for that model year.

(3) For each applicable fleet average NO_x standard, the annual report must also include documentation on all credit transactions the manufacturer has engaged in since those included in the last report. Information for each transaction must include:

- (i) Name of credit provider;
- (ii) Name of credit recipient;
- (iii) Date the transfer occurred;
- (iv) Quantity of credits transferred;

and

(v) Model year in which the credits were earned.

(4) Unless a manufacturer reports the data required by this section in the annual production report required under § 86.1844-01(e) and subsequent model year provisions, a manufacturer must submit an annual report for each model year after production ends for all affected vehicles and trucks produced by the manufacturer subject to the provisions of this subpart and no later than May 1 of the calendar year

following the given model year. Annual reports must be submitted to: Director, Vehicle Programs and Compliance Division, U.S. Environmental Protection Agency, 2000 Traverwood, Ann Arbor, Michigan 48105.

(5) Failure by a manufacturer to submit the annual report in the specified time period for all vehicles and trucks subject to the provisions in this section is a violation of section 203(a)(1) of the Clean Air Act for each subject vehicle and truck produced by that manufacturer.

(6) If EPA or the manufacturer determines that a reporting error occurred on an annual report previously submitted to EPA, the manufacturer's credit or debit calculations will be recalculated. EPA may void erroneous credits, unless transferred, and must adjust erroneous debits. In the case of transferred erroneous credits, EPA must adjust the selling manufacturer's credit or debit balance to reflect the sale of such credits and any resulting generation of debits.

(c) *Notice of opportunity for hearing.* Any voiding of the certificate under paragraph (a)(6) of this section will be made only after EPA has offered the manufacturer concerned an opportunity for a hearing conducted in accordance with § 86.614 for light-duty vehicles or § 86.1014 for light-duty trucks and, if a manufacturer requests such a hearing, will be made only after an initial decision by the Presiding Officer.

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